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Leu T	hr Th	r Ile 20	Leu	Asp	Met	Val	Lys 25	Val	Met	Thr	Phe	Ala 30	Leu	Gln	
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aagacactga agtagcccac ccctgcaggc aggtcctgat tgaaggggag gcttgtactg	660
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<220> <221> VARIANT <222> (160)(160) <223> wherein 'Xaa' is any amino acid.	
<220> <221> VARIANT <222> (200)(200)	

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<223> wherein 'Xaa' is any amino acid.
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<222> (202)..(202)
<223> wherein 'Xaa' is any amino acid.
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<221> VARIANT
<222> (214)..(214)
<223> wherein 'Xaa' is any amino acid.
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<222> (223)..(223)
<223> wherein 'Xaa' is any amino acid.
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Pro Arg Leu Pro Ala His Tyr Gln Phe Leu Leu Asp Leu Gly Val Arg
His Leu Val Ser Leu Thr Glu Arg Gly Pro Pro His Ser Asp Ser Cys
Pro Gly Leu Thr Leu His Arg Leu Arg Ile Pro Asp Phe Cys Pro Pro
                   70
Ala Pro Asp Gln Ile Asp Arg Phe Val Gln Ile Val Asp Glu Ala Asn
                                   90
Ala Arg Gly Glu Ala Val Gly Val His Cys Ala Leu Gly Phe Gly Arg
           100
                               105
Thr Gly Thr Met Leu Ala Cys Tyr Leu Val Lys Glu Arg Gly Leu Ala
Ala Gly Asp Ala Ile Ala Glu Ile Arg Arg Leu Arg Pro Gly Pro Ile
                       135
Glu Thr Tyr Glu Gln Glu Lys Ala Val Phe Gln Phe Tyr Gln Arg Thr
                   150
                                       155
Lys Xaa Gly Ala Leu Val Pro Phe Tyr Gln Ala Leu Thr Pro Leu Pro
His Val Val Asp Gly Ala Arg Asp Glu Gly Lys Trp Thr Lys Val Leu
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Asn Pro Leu Ala Pro Ile Gly Xaa Arg His Xaa Ser Ser Pro Pro Leu
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Gln Ala Gly Pro Asp Xaa Arg Gly Gly Leu Tyr Cys Phe Val Glu Xaa
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Met Ser Phe Thr Asn Gln Gly Lys Lys Lys Lys Lys Arg Lys Lys
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Lys Lys Lys Lys Lys Arg
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ggaagcatcc aggttccgga ctggcctttt gatgatggta cagcaccatc cagccagata
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gcaattcact gtgttgtagg ttttgggtga gctccagttg ctagttgccc tagctttaat
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                                                                     480
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<213> HOMO SAPIENS
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      (49)..(49)
<223> wherein 'Xaa' is any amino acid.
<220>
<221> Variant
<222>
       (110)..(110)
<223> wherein 'Xaa' is any amino acid.
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<221> Variant
<222> (121)..(121)
<223> wherein 'Xaa' is any amino acid.
 <220>
 <221> Variant
 <222> (127)..(127)
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<223> wherein 'Xaa' is any amino acid.	
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Xaa Lys Ala Thr Tyr Asn Ile Ala Leu Leu Glu Lys Gly Ser Ile Gln 50 60	
Val Pro Asp Trp Pro Phe Asp Asp Gly Thr Ala Pro Ser Ser Gln Ile 65 70 75 80	
Ile Asp Asn Trp Leu Lys Leu Met Lys Asn Lys Phe His Glu Asp Pro 85 90 95	
Gly Cys Cys Ile Ala Ile His Cys Val Val Gly Phe Gly Xaa Ala Pro 100 105 110	
Val Ala Ser Cys Pro Ser Phe Asn Xaa Arg Trp Asn Glu Ile Xaa Lys 115 120 125	
Cys Ser Thr Val His Gln Ile Lys Val Thr Trp Asn Phe Xaa Gln Gln 130 135 140	
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cgcccacagg agttcattgc ctctcagggg cctctcaaga aaacactgga gaacttctgg	300
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                                                                   540
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tecgaceaca geatecttga ggeteceage tecetgeteg cetttatgga getggtacag
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                                                                   1020
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1380
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<220> <221> Variant

<213> HOMO SAPIENS

<220> <221> Variant <222> (46)..(46)

<223> wherein 'Xaa' is any amino acid.

- <222> (180)..(180) <223> wherein 'Xaa' is any amino acid.
- <220>
- <221> Variant
- <222> (201)..(201)
- <223> wherein 'Xaa' is any amino acid.
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- Leu Glu Ala Glu Tyr Pro Ala Asn Thr Thr Lys Asn Cys Xaa Pro His
- Val Leu Pro Tyr Asp His Ser Arg Val Arg Leu Thr Gln Leu Glu Gly 50 55 60
- Glu Pro His Ser Asp Tyr Ile Asn Ala Asn Leu Val Pro Gly Tyr Thr 65 70 75 80
- Arg Pro Gln Glu Phe Ile Ala Ser Gln Gly Pro Leu Lys Lys Thr Leu 85 90 95
- Glu Asn Phe Trp Arg Leu Val Arg Glu Gln Gln Val Arg Ile Ile Ile 100 105 110
- Met Pro Thr Ile Ser Met Glu Asn Gly Arg Val Leu Cys Glu His Tyr 115 120 125
- Trp Leu Thr Asp Ser Thr Pro Asp Thr His Gly His Ile Thr Ile His 130 135 140
- Leu Leu Ala Glu Glu Pro Glu Asp Glu Trp Thr Lys Arg Glu Phe Gln 145 150 155 160
- Leu Gln His Val Val Gln Gln His Gln Arg Arg Val Glu Gln Leu Gln 165 170 175
- Phe Thr Thr Xaa Ser Asp His Ser Ile Leu Glu Ala Pro Ser Ser Leu 180 185 190
- Leu Ala Phe Met Glu Leu Val Gln Xaa Gln Ala Arg Ala Thr Gln Gly 195 200 205
- Val Gly Pro Ile Leu Val His Cys Arg Gly Cys Pro Cys Gly Val Gly 210 215 220
- Met Gly Arg Thr Gly Thr Phe Val Ala Leu Ser Arg Leu Leu Gln Gln 225 230 235 240
- Leu Glu Glu Glu Gln Met Val Asp Val Phe His Ala Val Tyr Ala Leu 245 250 255
- Arg Met His Gln Pro Leu Met Ile Gln Thr Leu Ser Gln Tyr Val Phe

265 270 260

Leu His Ser Cys Leu Leu Asn Lys Ile Leu Glu Gly Pro Phe Asn Ile 280 Ser Glu Ser Trp Pro Ile Ser Val Thr Asp Leu Pro Gln Ala Cys Ala Lys Arg Ala Ala Ser Ala Asn Ala Gly Phe Leu Lys Glu Tyr Glu Ala Ile Lys Asp Glu Ala Gly Phe Ser Ala Pro Pro Pro Gly Tyr Glu Gln Asp Ser Pro Val Ser Tyr Asp Arg Ser Gln Gly Gln Phe Ser Pro Val Glu Glu Ser Pro Pro Asp Asp Met Pro Leu Trp Lys Pro Met Ile Cys 360 Ala Leu Gln Gly Pro Ser Gly Arg Asp His Thr Val Leu Thr Gly 375 Pro Ala Gly Pro Lys Glu Leu Trp Glu Leu Val Trp Gln His Arg Ala His Val Leu Val Ser Leu Cys Pro Pro Asn Val Met Glu Lys Glu Phe 410 Trp Pro Thr Glu Met Gln Pro Val Val Thr Asp Met Val Thr Val His 425 Trp Val Ala Glu Ser Ser Thr Ala Gly Trp Phe Cys Thr Leu Leu Arg 440 Val Thr His Gly Glu Ser Arg Lys Glu Arg Glu Val Gln Arg Leu Gln Phe Pro Tyr Leu Glu Pro Gly His Glu Leu Pro Ala Thr Thr Leu Leu 470 475 Pro Phe Leu Ala Ala Val Gly Gln Cys Cys Ser Arg Gly Asn Asn Lys Lys Pro Gly Thr Leu Leu Ser His Ser Asn Lys Gly Ala Thr Gln Leu Gly Thr Phe Leu Ala Met Glu Gln Leu Leu Gln Gln Ala Gly Ser Glu Cys Thr Val Asp Ile Phe Asn Val Ala Leu Gln Gln Ser Gln Ala Cys

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Leu Asn Ser Ala Leu Ala Asp Gly Leu Pro

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<213> HOMO SAPIENS

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Val Ile Ser Pro Ala Ser Val Tyr Val Val Lys Ile Thr Gly Glu Ser 50 55 60

Lys Asn Tyr Phe Phe Glu Phe Glu Glu Phe Asn Ser Thr Leu Pro Pro 65 70 75 80

Pro Val Ile Phe Lys Ala Ser Tyr His Gly Leu Tyr Tyr Ile Ile Thr 85 90 95

Leu Val Val Val Asn Gly Asn Val Val Thr Lys Pro Ser Arg Ser Ile
100 105 110

Thr Val Leu Thr Lys Pro Leu Pro Val Thr Ser Val Ser Ile Tyr Asp 115 120 125

Tyr Lys Pro Ser Pro Glu Thr Gly Val Leu Phe Glu Ile His Tyr Pro 130 135 140

Glu Lys Tyr Asn Val Phe Thr Arg Val Asn Ile Ser Tyr Trp Glu Gly
145 150 155 160

Lys Asp Phe Arg Thr Met Leu Tyr Lys Asp Phe Phe Lys Gly Lys Thr 165 170 175

Val Phe Asn His Trp Leu Pro Gly Met Cys Tyr Ser Asn Ile Thr Phe 180 185 190

Gln Leu Val Ser Glu Ala Thr Phe Asn Lys Ser Thr Leu Val Glu Tyr 195 200 205

Ser Gly Val Ser His Glu Pro Lys Gln His Arg Thr Ala Pro Tyr Pro 210 215 220

Pro Gln Asn Ile Ser Val Arg Ile Val Asn Leu Asn Lys Asn Asn Trp 225 230 235 240

Glu Glu Gln Ser Gly Asn Phe Pro Glu Glu Ser Phe Met Arg Ser Gln 245 250 255

Asp Thr Ile Gly Lys Glu Lys Leu Phe His Phe Thr Glu Glu Thr Pro

Glu Ile Pro Ser Gly Asn Ile Ser Ser Gly Trp Pro Asp Phe Asn Ser 275 280 285

12

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605

Val Arg Ile Ala Asn Leu Leu Pro Ala Trp Tyr Tyr Asn Phe Arg Val

600

595

Thr Met Val Thr Trp Gly Asp Pro Glu Leu Ser Cys Cys Asp Ser Ser 615 Thr Ile Ser Phe Ile Thr Ala Pro Val Ala Pro Glu Ile Thr Ser Val 635 630 Glu Tyr Phe Asn Ser Leu Leu Tyr Ile Ser Trp Thr Tyr Gly Asp Asp 650 Thr Thr Asp Leu Ser His Ser Arg Met Leu His Trp Met Val Val Ala Glu Gly Lys Lys Lys Ile Lys Lys Ser Val Thr Arg Asn Val Met Thr 680 Ala Ile Leu Ser Leu Pro Pro Gly Asp Ile Tyr Asn Leu Ser Val Thr Ala Cys Thr Glu Arg Gly Ser Asn Thr Ser Met Leu Arg Leu Val Lys 715 710 Leu Glu Pro Ala Pro Pro Lys Ser Leu Phe Ala Val Asn Lys Thr Gln Thr Ser Val Thr Leu Leu Trp Val Glu Glu Gly Val Ala Asp Phe Phe 745 Glu Val Phe Cys Gln Gln Val Gly Ser Ser Gln Lys Thr Lys Leu Gln Glu Pro Val Ala Val Ser Ser His Val Val Thr Ile Ser Ser Leu Leu 775 Pro Ala Thr Ala Tyr Asn Cys Ser Val Thr Ser Phe Ser His Asp Ser Pro Ser Val Pro Thr Phe Ile Ala Val Ser Thr Met Val Thr Glu Met 810 Asn Pro Asn Val Val Ile Ser Val Leu Ala Ile Leu Ser Thr Leu Leu Ile Gly Leu Leu Val Thr Leu Ile Ile Leu Arg Lys Lys His 840 Leu Gln Met Ala Arg Glu Cys Gly Ala Gly Thr Phe Val Asn Phe Ala Ser Leu Glu Arg Asp Gly Lys Leu Pro Tyr Asn Trp Ser Lys Asn Gly 875 870 Leu Lys Lys Arg Lys Leu Thr Asn Pro Val Gln Leu Asp Asp Phe Asp Ala Tyr Ile Lys Asp Met Ala Lys Asp Ser Asp Tyr Lys Phe Ser Leu 905 Gln Phe Glu Glu Leu Lys Leu Ile Gly Leu Asp Ile Pro His Phe Ala

Ala Asp Leu Pro Leu Asn Arg Cys Lys Asn Arg Tyr Thr Asn Ile Leu

930 935 940

Pro Tyr Asp Phe Ser Arg Val Arg Leu Val Ser Met Asn Glu Glu 945 950 955 960

Gly Ala Asp Tyr Ile Asn Ala Asn Tyr Ile Pro Gly Tyr Asn Ser Pro 965 970 975

Gln Glu Tyr Ile Ala Thr Gln Gly Pro Leu Pro Glu Thr Arg Asn Asp 980 985 990

Phe Trp Lys Met Val Leu Gln Gln Lys Ser Gln Ile Ile Val Met Leu 995 1000 1005

Thr Gln Cys Asn Glu Lys Arg Arg Val Lys Cys Asp His Tyr Trp 1010 1015 1020

Pro Phe Thr Glu Glu Pro Ile Ala Tyr Gly Asp Ile Thr Val Glu 1025 . 1030 1035

Met Ile Ser Glu Glu Glu Gln Asp Asp Trp Ala Cys Arg His Phe 1040 1045 1050

Arg Ile Asn Tyr Ala Asp Glu Met Gln Asp Val Met His Phe Asn 1055 1060 1065

Tyr Thr Ala Trp Pro Asp His Gly Val Pro Thr Ala Asn Ala Ala 1070 1075 1080

Glu Ser Ile Leu Gln Phe Val His Met Val Arg Gln Gln Ala Thr 1085 1090 1095

Lys Ser Lys Gly Pro Met Ile Ile His Cys Ser Ala Gly Val Gly 1100 1105 1110

Arg Thr Gly Thr Phe Ile Ala Leu Asp Arg Leu Leu Gln His Ile 1115 1120 1125

Arg Asp His Glu Phe Val Asp Ile Leu Gly Leu Val Ser Glu Met 1130 1140

Arg Ser Tyr Arg Met Ser Met Val Gln Thr Glu Glu Gln Tyr Ile 1145 1150 1155

Phe Ile His Gln Cys Val Gln Leu Met Trp Met Lys Lys Gln 1160 1165 1170

Gln Phe Cys Ile Ser Asp Val Ile Tyr Glu Asn Val Ser Lys Ser 1175 1180 1185

<210> 28

<211> 405

<212> PRT

<213> Mus musculus

<400> 28

Met Val Thr Glu Val Asn Pro Asn Val Val Val Ile Ser Val Leu Ala 1 5 10 15

Ile Leu Ser Thr Leu Leu Ile Gly Leu Leu Leu Val Thr Leu Val Ile

20 25 30

Leu	Arg	Lys 35	Lys	His	Leu	Gln	Met 40	Ala	Arg	Glu	Cys	Gly 45	Ala	Gly	'l'hr
Phe	Val 50	Asn	Phe	Ala	Ser	Leu 55	Glu	Arg	Glu	Gly	Lys 60	Leu	Pro	Tyr	Ser
Trp 65	Arg	Arg	Ser	Val	Phe 70	Ala	Leu	Leu	Thr	Leu 75	Leu	Pro	Ser	Cys	Leu 80
Trp	Thr	Asp	Tyr	Leu 85	Leu	Ala	Phe	Tyr	Ile 90	Asn	Pro	Trp	Ser	Lys 95	Asn
Gly	Leu	Lys	Lys 100	Arg	Lys	Leu	Thr	Asn 105	Pro	Val	Gln	Leu	Asp 110	Asp	Phe
Asp	Ser	Tyr 115	Ile	Lys	Asp	Met	Ala 120	Lys	Asp	Ser	Asp	Tyr 125	Lys	Phe	Ser
Leu	Gln 130	Phe	Glu	Glu	Leu	Lys 135	Leu	Ile	Gly	Leu	Asp 140	Ile	Pro	His	Phe
Ala 145	Ala	Asp	Leu	Pro	Leu 150	Asn	Arg	Cys	Lys	Asn 155	Arg	Tyr	Thr	Asn	Ile 160
Leu	Pro	Tyr	Asp	Phe 165	Ser	Arg	Val	Arg	Leu 170	Val	Ser	Met	Asn	Glu 175	Glu
Glu	Gly	Ala	Asp 180	Tyr	Ile	Asn	Ala	Asn 185	Tyr	Ile	Pro	Gly	Tyr 190	Asn	Ser
Pro	Gln	Glu 195		Ile	Ala	Thr	Gln 200		Pro	Leu	Pro	Glu 205	Thr	Arg	Asn
Asp	Phe 210	Trp	Lys	Met	Val	Leu 215	. Gln	Gln	Lys	Ser	His 220	Ile	Ile	Val	Met
Leu 225	Thr	Gln	Cys	Asn	Glu 230	Lys	Arg	Arg	Val	Lys 235		Asp	His	Tyr	Trp 240
Pro	Phe	Thr	Glu	Glu 245		Ile	· Ala	Tyr	Gly 250		Ile	Thr	Val	Glu 255	Met
Val	Ser	Glu	Glu 260		Glu	Glu	ı Asp	Trp 265		Ser	Arg	His	Phe 270	Arg	Ile
Asn	Tyr	Ala 275		Glu	. Ala	Gln	Asp 280		Met	His	Phe	Asn 285		Thr	Gly
Trp	Pro 290		His	Gly	Val	Pro 295	Pro	Ala	Asn	Ala	Ala 300		Ser	Ile	Leu
Gln 305		Val	. Phe	Thr	Val 310		g Gln	Gln	Ala	Ala 315		Ser	Lys	Gly	Pro 320
Met	Ile	Ile	His	Cys 325		Ala	a Gly	v Val	Gly 330		Thr	Gly	Thr	Phe 335	Ile
Ala	Leu	. Asp	Arg 340		ı Lev	Glr	n His	345		, Asp	His	Glu	Phe 350	val	Asp

Ile Leu Gly Leu Val Ser Glu Met Arg Ser Tyr Arg Met Ser Met Val 355 360 365

Gln Thr Glu Glu Gln Tyr Ile Phe Ile His Gln Cys Val Gln Leu Met 370 375 380

Trp Leu Arg Lys Lys Gln Gln Phe Cys Ile Ser Asp Val Ile Tyr Glu 385 390 395 400

Asn Val Ser Lys Ser 405

<210> 29

<211> 303

<212> PRT

<213> Schizosaccharomyces pombe

<400> 29

Met Ser Phe Lys Glu Val Ser Thr Glu Asn Gly Val Leu Thr Pro Leu 1 5 10 15

Ile Thr Ile Lys Glu Lys Ala Tyr Met Ile Ile Glu Gly Leu Asn Glu 20 25 30

Glu Glu Ile Glu Leu Leu Asn Thr Arg Leu Pro Lys Leu Ser Lys Lys 35 40 45

Ala Leu Ala Arg Asn Arg Tyr Ser Asn Ile Val Pro Tyr Glu Asn Thr 50 55 60

Arg Val Arg Leu Asp Pro Met Trp Lys Glu Ala Cys Asp Tyr Ile Asn 65 70 75 80

Ala Ser Ile Val Lys Ile Pro Ser Gly Lys Thr Phe Ile Ala Thr Gln 85 90 95

Gly Pro Thr Ser Asn Ser Ile Asp Val Phe Trp Lys Met Val Trp Gln 100 105 110

Ser Val Pro Lys Ser Gly Ile Ile Val Met Leu Thr Lys Leu Arg Glu 115 120 125

Arg His Arg Leu Lys Cys Asp Ile Tyr Trp Pro Val Glu Leu Phe Glu 130 135 140

Thr Leu Asn Ile Gly Asp Leu Ser Val Ile Leu Val Lys Val Tyr Thr 145 150 155 160

Leu Thr Ser Leu Asn Glu Val Gln Val Arg Glu Phe Glu Leu Asn Lys 165 170 175

Asp Gly Val Lys Lys Ile Leu His Phe Tyr Tyr Asn Gly Trp Pro 180 185 190

Asp Phe Gly Ala Pro His Thr Phe Ser Leu Leu Ser Leu Thr Arg Tyr 195 200 205

Ile Lys Ser Leu Ser Tyr Ser Pro Asp Phe Glu Thr Ala Pro Ile Ile 210 215 220

Val His Cys Ser Ala Gly Cys Gly Arg Thr Gly Thr Phe Met Ala Leu 225 230 235 240

Phe Glu Ile Leu Ser Gln Thr Asp Asp Ser Thr Ser Thr Ser Lys Phe 245 250 255

Glu Val Asp Asn Ile Ala Asn Ile Val Ser Ser Leu Arg Ser Gln Arg 260 265 270

Met Gln Ser Val Gln Ser Val Asp Gln Leu Val Phe Leu Tyr Thr Val 275 280 285

Ser Gln Glu Leu Leu Gln Gly Lys Glu Phe Leu Leu Pro Gln Leu 290 295 300

<210> 30

<211> 580

<212> PRT

<213> homo sapiens

<400> 30

Met Lys Asp Arg Leu Tyr Phe Ala Thr Leu Arg Asn Arg Pro Lys Ser 1 $$ 5 $$ 10 $$ 15

Thr Val Asn Thr His Tyr Phe Ser Ile Asp Glu Glu Leu Val Tyr Glu 20 25 30

Asn Phe Tyr Ala Asp Phe Gly Pro Leu Asn Leu Ala Met Val Tyr Arg 35 40 45

Tyr Cys Cys Lys Leu Asn Lys Lys Leu Lys Ser Tyr Ser Leu Ser Arg 50 60

Lys Lys Ile Val His Tyr Thr Cys Phe Asp Gln Arg Lys Arg Ala Asn 70 75 80

Ala Ala Phe Leu Ile Gly Ala Tyr Ala Val Ile Tyr Leu Lys Lys Thr 85 90 95

Leu Pro Phe Arg Asp Ala Ser Phe Gly Asn Cys Thr Tyr Asn Leu Thr 115 120 125

Ile Leu Asp Cys Leu Gln Gly Ile Arg Lys Gly Leu Gln His Gly Phe 130 135 140

Phe Asp Phe Glu Thr Ile Asp Val Asp Glu Tyr Glu His Tyr Glu Arg 145 150 155 160

Val Glu Asn Gly Asp Phe Asn Cys Ile Val Pro Gly Lys Phe Leu Ala 165 170 175

Phe Ser Gly Pro His Pro Lys Ser Lys Ile Glu Asn Gly Tyr Pro Leu 180 185 190

His Ala Pro Glu Ala Tyr Phe Pro Tyr Phe Lys Lys His Asn Val Thr 195 200 205 Ala Val Val Arg Leu Asn Lys Lys Ile Tyr Glu Ala Lys Arg Phe Thr 215 Asp Ala Gly Phe Glu His Tyr Asp Leu Phe Phe Ile Asp Gly Ser Thr 230 235 Pro Ser Asp Asn Ile Val Arg Arg Phe Leu Asn Ile Cys Glu Asn Thr 250 245 Glu Gly Ala Ile Ala Val His Cys Lys Ala Gly Leu Gly Arg Thr Gly Thr Leu Ile Ala Cys Tyr Val Met Lys His Tyr Arg Phe Thr His Ala Glu Ile Ile Ala Trp Ile Arg Ile Cys Arg Pro Gly Ser Ile Ile Gly 295 Pro Gln Gln His Phe Leu Glu Glu Lys Gln Ala Ser Leu Trp Val Gln Gly Asp Ile Phe Arg Ser Lys Leu Lys Asn Arg Pro Ser Ser Glu Gly 330 325 Ser Ile Asn Lys Ile Leu Ser Gly Leu Asp Asp Met Ser Ile Gly Gly 345 340 Asn Leu Ser Lys Thr Gln Asn Met Glu Arg Phe Gly Glu Asp Asn Leu 360 Glu Asp Asp Asp Val Glu Met Lys Asn Gly Ile Thr Gln Gly Asp Lys Leu Arg Ala Leu Lys Ser Gln Arg Gln Pro Arg Thr Ser Pro Ser Cys 390 Ala Phe Arg Ser Asp Asp Thr Lys Gly His Pro Arg Ala Val Ser Gln Pro Phe Arg Leu Ser Ser Leu Gln Gly Ser Ala Val Thr Leu Lys 425 Thr Ser Lys Met Ala Leu Ser Pro Ser Ala Thr Ala Lys Arg Ile Asn 435 Arg Thr Ser Leu Ser Ser Gly Ala Thr Val Arg Ser Phe Ser Ile Asn 455 Ser Arg Leu Ala Ser Ser Leu Gly Asn Leu Asn Ala Ala Thr Asp Asp Pro Glu Asn Lys Lys Thr Ser Ser Ser Ser Lys Ala Gly Phe Thr Ala 490 485 Ser Pro Phe Thr Asn Leu Leu Asn Gly Ser Ser Gln Pro Thr Thr Arg 505 500 Asn Tyr Pro Glu Leu Asn Asn Asn Gln Tyr Asn Arg Ser Ser Asn Ser

520

515

Asn Gly Gly Asn Leu Asn Ser Pro Pro Gly Pro His Ser Ala Lys Thr 530 540

Glu Glu His Thr Thr Ile Leu Arg Pro Ser Tyr Thr Gly Leu Ser Ser 545 550 555 560

Ser Ser Ala Arg Phe Leu Ser Arg Ser Ile Pro Ser Leu Gln Ser Glu 565 570 575

Tyr Val His Tyr 580

<210> 31

<211> 459

<212> PRT

<213> homo sapiens

<400> 31

Met Lys Arg Lys Ser Glu Arg Arg Ser Ser Trp Ala Ala Ala Pro Pro 1 5 10 15

Cys Ser Arg Arg Cys Ser Ser Thr Ser Pro Gly Val Lys Lys Ile Arg 20 25 30

Ser Ser Thr Gln Gln Asp Pro Arg Arg Arg Asp Pro Gln Asp Asp Val 35 40 45

Tyr Leu Asp Ile Thr Asp Arg Leu Cys Phe Ala Ile Leu Tyr Ser Arg 50 55 60

Pro Lys Ser Ala Ser Asn Val His Tyr Phe Ser Ile Asp Asn Glu Leu 70 75 80

Glu Tyr Glu Asn Phe Tyr Ala Asp Phe Gly Pro Leu Asn Leu Ala Met 85 90 95

Val Tyr Arg Tyr Cys Cys Lys Ile Asn Lys Lys Leu Lys Ser Ile Thr

Met Leu Arg Lys Lys Ile Val His Phe Thr Gly Ser Asp Gln Arg Lys
115 120 125

Gln Ala Asn Ala Ala Phe Leu Val Gly Cys Tyr Met Val Ile Tyr Leu 130 135 140

Gly Arg Thr Pro Glu Glu Ala Tyr Arg Ile Leu Ile Phe Gly Glu Thr 145 150 155 160

Ser Tyr Ile Pro Phe Arg Asp Ala Ala Tyr Gly Ser Cys Asn Phe Tyr 165 170 175

Ile Thr Leu Leu Asp Cys Phe His Ala Val Lys Lys Ala Met Gln Tyr 180 185 190

Gly Phe Leu Asn Phe Asn Ser Phe Asn Leu Asp Glu Tyr Glu His Tyr 195 200 205

Glu Lys Ala Glu Asn Gly Asp Leu Asn Trp Ile Ile Pro Asp Arg Phe 210 215 220

Ile Ala Phe Cys Gly Pro His Ser Arg Ala Arg Leu Glu Ser Gly Tyr 230 His Gln His Ser Pro Glu Thr Tyr Ile Gln Tyr Phe Lys Asn His Asn 250 245 Val Thr Thr Ile Ile Arg Leu Asn Lys Arg Met Tyr Asp Ala Lys Arg 265 Phe Thr Asp Ala Gly Phe Asp His His Asp Leu Phe Phe Ala Asp Gly 280 Ser Thr Pro Thr Asp Ala Ile Val Lys Glu Phe Leu Asp Ile Cys Glu 295 Asn Ala Glu Gly Ala Ile Ala Val His Cys Lys Ala Gly Leu Gly Arg Thr Gly Thr Leu Ile Ala Cys Tyr Ile Met Lys His Tyr Arg Met Thr 325 Ala Ala Glu Thr Ile Ala Trp Val Arg Ile Cys Arg Pro Gly Ser Val Ile Gly Pro Gln Gln Gln Phe Leu Val Met Lys Gln Thr Asn Leu Trp 360 Leu Glu Gly Asp Tyr Phe Arg Gln Lys Leu Lys Gly Gln Glu Asn Gly Gln His Arg Ala Ala Phe Ser Lys Leu Leu Ser Gly Val Asp Asp Ile 390 Ser Ile Asn Gly Val Glu Asn Gln Asp Gln Gln Glu Pro Glu Pro Tyr Ser Asp Asp Glu Ile Asn Gly Val Thr Gln Gly Asp Arg Leu Arg 425 Ala Leu Lys Ser Arg Arg Gln Ser Lys Thr Asn Ala Ile Pro Leu Thr 435 Leu Ser Ile Ser Arg Thr Lys Thr Val Leu Arg <210> 32 <211> 551 <212> PRT <213> Saccharomyces cerevisiae <400> 32 Met Arg Arg Ser Val Tyr Leu Asp Asn Thr Ile Glu Phe Leu Arg Gly Arg Val Tyr Leu Gly Ala Tyr Asp Tyr Thr Pro Glu Asp Thr Asp Glu

Leu Val Phe Phe Thr Val Glu Asp Ala Ile Phe Tyr Asn Ser Phe His

Leu Asp Phe Gly Pro Met Asn Ile Gly His Leu Tyr Arg Phe Ala Val Ile Phe His Glu Ile Leu Asn Asp Pro Glu Asn Ala Asn Lys Ala Val Val Phe Tyr Ser Ser Ala Ser Thr Arg Gln Arg Ala Asn Ala Ala Cys 90 Met Leu Cys Cys Tyr Met Ile Leu Val Gln Ala Trp Thr Pro His Gln 105 Val Leu Gln Pro Leu Ala Gln Val Asp Pro Pro Phe Met Pro Phe Arg 120 Asp Ala Gly Tyr Ser Asn Ala Asp Phe Glu Ile Thr Ile Gln Asp Val 135 Val Tyr Gly Val Trp Arg Ala Lys Glu Lys Gly Leu Ile Asp Leu His 150 Ser Phe Asn Leu Glu Ser Tyr Glu Lys Tyr Glu His Val Glu Phe Gly Asp Phe Asn Val Leu Thr Pro Asp Phe Ile Ala Phe Ala Ser Pro Gln 185 Glu Asp His Pro Lys Gly Tyr Leu Ala Thr Lys Ser Ser His Leu Asn Gln Pro Phe Lys Ser Val Leu Asn Phe Phe Ala Asn Asn Asn Val Gln 215 Leu Val Val Arg Leu Asn Ser His Leu Tyr Asn Lys Lys His Phe Glu 230 Asp Ile Gly Ile Gln His Leu Asp Leu Ile Phe Glu Asp Gly Thr Cys 250 Pro Asp Leu Ser Ile Val Lys Asn Phe Val Gly Ala Ala Glu Thr Ile Ile Lys Arg Gly Gly Lys Ile Ala Val His Cys Lys Ala Gly Leu Gly . 280 Arg Thr Gly Cys Leu Ile Gly Ala His Leu Ile Tyr Thr Tyr Gly Phe 290 Thr Ala Asn Glu Cys Ile Gly Phe Leu Arg Phe Ile Arg Pro Gly Met 315 310 Val Val Gly Pro Gln Gln His Trp Leu Tyr Leu His Gln Asn Asp Phe Arg Glu Trp Lys Tyr Thr Thr Arg Ile Ser Leu Lys Pro Ser Glu Ala 345 Ile Gly Gly Leu Tyr Pro Leu Ile Ser Leu Glu Glu Tyr Arg Leu Gln

Lys Lys Lys Leu Lys Asp Asp Lys Arg Val Ala Gln Asn Asn Ile Glu

	370					375					380				
Gly 385	Glu	Leu	Arg	Asp	Leu 390	Thr	Met	Thr	Pro	Pro 395	Ser	Asn	Gly	His	Gly 400
Ala	Leu	Ser	Ala	Arg 405	Asn	Ser	Ser	Gln	Pro 410	Ser	Thr	Ala	Asn	Asn 415	Gly
Ser	Asn	Ser	Phe 420	Lys	Ser	Ser	Ala	Val 425	Pro	Gln	Thr	Ser	Pro 430	Gly	Gln
Pro	Arg	Lys 435	Gly	Gln	Asn	Gly	Ser 440	Asn	Thr	Ile	Glu	Asp 445	Ile	Asn	Asn
Asn	Arg 450	Asn	Pro	Thr	Ser	His 455	Ala	Asn	Arg	Lys	Val 460	Val	Ile	Glu	Ser
Asn 465	Asn	Ser	Asp	Asp	Glu 470	Ser	Met	Gln	Asp	Thr 475	Asn	Gly	Thr	Ser	Asn 480
His	Tyr	Pro	Lys	Val 485	Ser	Arg	Lys	Lys	Asn 490	Asp	Ile	Ser	Ser	Ala 495	Ser
Ser	Ser	Arg	Met 500	Glu	Asp	Asn	Glu	Pro 505	Ser	Ala	Thr	Asn	Ile 510	Asn	Asn
Ala	Ala	Asp 515	Asp	Thr	Ile	Leu	Arg 520	Gln	Leu	Leu	Pro	Lys 525	Asn	Arg	Arg
Val	Thr 530	Ser	Gly	Arg	Arg	Thr 535	Thr	Ser	Ala	Ala	Gly 540	Gly	Ile	Arg	Lys
Ile 545	Ser	Gly	Ser	Ile	Lys 550	Lys									
<21: <21: <21: <21:	1> : 2> :	33 173 PRT homo	sapi	iens											
<40	0>	33													
Met 1	Ala	Arg	Met	Asn 5	Arg	Pro	Ala	Pro	Val 10	Glu	Val	Thr	Tyr	Lys 15	Asn
Met	Arg	Phe	Leu 20	Ile	Thr	His	Asn	Pro 25	Thr	Asn	Ala	Thr	Leu 30	Asn	Lys

Phe Ile Glu Glu Leu Lys Lys Tyr Gly Val Thr Thr Ile Val Arg Val Cys Glu Ala Thr Tyr Asp Thr Thr Leu Val Glu Lys Glu Gly Ile His 50 Val Leu Asp Trp Pro Phe Asp Asp Gly Ala Pro Pro Ser Asn Gln Ile

Val Asp Asp Trp Leu Ser Leu Val Lys Ile Lys Phe Arg Glu Glu Pro

Gly Cys Cys Ile Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro

100 105 110

Val Leu Val Ala Leu Ala Leu Ile Glu Gly Gly Met Lys Tyr Glu Asp 115 120 125

Ala Val Gln Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys 130 135 140

Gln Leu Leu Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe 145 150 155 160

Lys Asp Ser Asn Gly His Arg Asn Asn Cys Cys Ile Gln 165 170

<210> 34

<211> 167

<212> PRT

<213> homo sapiens

<400> 34

Met Asn Arg Pro Ala Pro Val Glu Ile Ser Tyr Glu Asn Met Arg Phe 1 5 10 15

Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys Phe Thr Glu 20 25 30

Glu Leu Lys Lys Tyr Gly Val Thr Thr Leu Val Arg Val Cys Asp Ala 35 40 45

Thr Tyr Asp Lys Ala Pro Val Glu Lys Glu Gly Ile His Val Leu Asp 50 55 60

Trp Pro Phe Asp Asp Gly Ala Pro Pro Pro Asn Gln Ile Val Asp Asp 65 70 75 80

Trp Leu Asn Leu Leu Lys Thr Lys Phe Arg Glu Glu Pro Gly Cys Cys 85 90 95

Val Ala Val His Cys Val Ala Gly Leu Gly Arg Ala Pro Val Leu Val 100 105 110

Ala Leu Ala Leu Ile Glu Cys Gly Met Lys Tyr Glu Asp Ala Val Gln
115 120 125

Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys Gln Leu Leu 130 135 140

Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe Arg Asp Thr 145 150 155

Asn Gly His Cys Cys Val Gln 165

<210> 35

<211> 167

<212> PRT

<213> Mus musculus

<400> 35

Met Asn Arg Pro Ala Pro Val Glu Ile Ser Tyr Glu Asn Met Arg Phe 1 5 10 15

Leu Ile Thr His Asn Pro Thr Asn Ala Thr Leu Asn Lys Phe Thr Glu 20 25 30

Glu Leu Lys Lys Tyr Gly Val Thr Thr Leu Val Arg Val Cys Asp Ala

Thr Tyr Asp Lys Ala Pro Val Glu Lys Glu Gly Ile His Val Leu Asp 50 55 60

Trp Pro Phe Asp Asp Gly Ala Pro Pro Pro Asn Gln Ile Val Asp Asp 65 70 . 75 80

Trp Leu Asn Leu Leu Lys Thr Leu Phe Arg Glu Glu Pro Gly Cys Cys 85 90 95

Val Ala Val His Cys Val Ala Gly Ile Gly Arg Ala Pro Val Leu Val 100 105 110

Ala Leu Ala Leu Ile Glu Cys Gly Met Lys Tyr Glu Asp Ala Val Gln
115 120 125

Phe Ile Arg Gln Lys Arg Arg Gly Ala Phe Asn Ser Lys Gln Leu Leu 130 135 140

Tyr Leu Glu Lys Tyr Arg Pro Lys Met Arg Leu Arg Phe Arg Asp Thr 145 150 155 160

Asn Gly His Cys Cys Val Gln 165

<210> 36

<211> 178

<212> PRT

<213> Drosophila melanogaster

<400> 36

Met Ser Ile Thr Met Arg Gln Lys Asp Leu Arg Pro Ala Pro Ala Leu 1 5 10 15

Ile Glu Tyr Lys Gly Met Lys Phe Leu Ile Thr Asp Arg Pro Ser Asp 20 25 30

Ile Thr Ile Asn His Tyr Ile Met Glu Leu Lys Lys Asn Asn Val Asn 35 40 45

Thr Val Val Arg Val Cys Glu Pro Ser Tyr Asn Thr Asp Glu Leu Glu 50 55 60

Thr Gln Gly Ile Thr Val Lys Asp Leu Ala Phe Glu Asp Gly Thr Phe 65 70 75 80

Pro Pro Gln Gln Val Val Asp Glu Trp Phe Glu Phe Phe Val Val Leu 85 90 95

Tyr Arg Tyr Gln Gln Asn Pro Glu Ala Cys Val Ala Val His Cys Val 100 105 110 Ala Gly Leu Gly Arg Ala Pro Val Leu Val Ala Leu Ala Leu Ile Glu 115 120 125

Leu Gly Leu Lys Tyr Glu Ala Ala Val Glu Met Ile Arg Asp Lys Arg 130 135 140

Arg Gly Ala Ile Asn Ala Lys Gln Leu Ser Phe Leu Glu Lys Tyr Lys 145 150 155 160

Pro Lys Ala Arg Leu Lys His Lys Asn Gly His Lys Asn Ser Cys Ser 165 170 175

Val Gln

<210> 37

<211> 1705

<212> PRT

<213> Mus musculus

<400> 37

Met Arg Pro Leu Ile Leu Leu Ala Ala Leu Leu Trp Leu Gln Asp Ser 1 5 10 15

Leu Ala Gln Glu Asp Val Cys Ser Ser Leu Asp Gly Ser Pro Asp Arg 20 25 30

Gln Gly Gly Gly Pro Pro Leu Ser Val Asn Val Ser Ser Arg Gly Lys 35 40 45

Pro Thr Ser Leu Phe Leu Ser Trp Val Ala Ala Glu Pro Gly Gly Phe 50 55 60

Asp Tyr Ala Leu Cys Leu Arg Ala Met Asn Leu Ser Gly Phe Pro Glu 65 70 75 80

Gly Gln Gln Leu Gln Ala His Thr Asn Glu Ser Ser Phe Glu Phe His
85 90 95

Gly Leu Val Pro Gly Ser Arg Tyr Gln Leu Glu Leu Thr Val Leu Arg 100 105 110

Pro Cys Trp Gln Asn Val Thr Ile Thr Leu Thr Ala Arg Thr Ala Pro 115 120 125

Thr Val Val Arg Gly Leu Gln Leu His Ser Thr Gly Ser Pro Ala Ser 130 135 140

Leu Glu Ala Ser Trp Ser Asp Ala Ser Gly Asp Gln Asp Ser Tyr Gln 145 150 155 160

Leu Leu Tyr His Pro Glu Ser His Thr Leu Ala Cys Asn Val Ser 165 170 175

Val Ser Pro Asp Thr Leu Ser Tyr Asn Phe Gly Asp Leu Leu Pro Gly 180 185 190

Ser Gln Tyr Val Leu Glu Val Ile Thr Trp Ala Gly Ser Leu His Ala 195 200 205 Lys Thr Ser Ile Leu Gln Trp Thr Glu Pro Val Pro Pro Asp His Leu 215 Thr Leu Arg Ala Leu Gly Thr Ser Ser Leu Gln Ala Phe Trp Asn Ser 235 230 Ser Glu Gly Ala Thr Trp Phe His Leu Ile Leu Thr Asp Leu Leu Glu 250 Gly Thr Asn Leu Thr Lys Val Val Arg Gln Gly Ile Ser Thr His Thr Phe Leu Arg Leu Ser Pro Gly Thr Pro Tyr Gln Leu Lys Ile Cys Ala 280 Ala Ala Gly Pro His Gln Ile Trp Gly Pro Asn Ala Thr Glu Trp Thr 295 Tyr Pro Ser Tyr Pro Ser Asp Leu Val Leu Thr Pro Leu Trp Asn Glu 315 310 Leu Trp Ala Ser Trp Lys Ala Gly Gln Gly Ala Arg Asp Gly Tyr Val Leu Lys Leu Ser Gly Pro Val Glu Asn Thr Thr Thr Leu Gly Pro Glu 345 Glu Cys Asn Ala Val Phe Pro Gly Pro Leu Pro Pro Gly His Tyr Thr Leu Gly Leu Arg Val Leu Ala Gly Pro Tyr Asp Ala Trp Val Glu Gly 375 Ser Ile Trp Leu Ala Glu Ser Ala Ala Arg Pro Met Glu Val Pro Gly Ala Arg Leu Trp Leu Glu Gly Leu Glu Ala Thr Lys Gln Pro Gly Arg 410 Arg Ala Leu Leu Tyr Ser Val Asp Ala Pro Gly Leu Leu Gly Asn Ile Ser Val Ser Ser Gly Ala Thr His Val Thr Phe Cys Gly Leu Val Pro 440 Gly Ala His Tyr Arg Val Asp Ile Ala Ser Ser Met Gly Asp Ile Thr Gln Ser Leu Thr Gly Tyr Thr Ser Pro Leu Pro Pro Gln Ser Leu Glu 475 Ile Ile Ser Arg Asn Ser Pro Ser Asp Leu Thr Ile Gly Trp Ala Pro Ala Pro Gly Gln Met Glu Gly Tyr Lys Val Thr Trp His Gln Asp Gly 505 Ser Gln Arg Ser Pro Gly Asp Leu Val Asp Leu Gly Pro Asp Ile Ser 515

Ser Leu Thr Leu Lys Ser Leu Val Pro Gly Ser Cys Tyr Thr Val Ser

530 535 540

Ala 545	Trp	Ala	Trp	Ser	Gly 550	Asn	Leu	Ser	Ser	Asp 555	Ser	Gln	Lys	Ile	His 560
Ser	Cys	Thr	Arg	Pro 565	Ala	Pro	Pro	Thr	Asn 570	Leu	Ser	Leu	Gly	Phe 575	Ala
His	Gln	Pro	Ala 580	Thr	Leu	Arg	Ala	Ser 585	Trp	Cys	His	Pro	Pro 590	Gly	Gly
Arg	Asp	Ala 595	Phe	Gln	Leu	Arg	Leu 600	Tyr	Arg	Leu	Arg	Pro 605	Leu	Thr	Leu
Glu	Ser 610	Glu	Lys	Ile	Leu	Ser 615	Gln	Glu	Ala	Gln	Asn 620	Phe	Ser	Trp	Ala
Gln 625	Leu	Pro	Ala	Gly	Tyr 630	Glu	Phe	Gln	Val	Gln 635	Leu	Ser	Thr	Leu	Trp 640
Gly	Ser	Glu	Glu	Ser 645	Gly	Ser	Ala	Asn	Thr 650	Thr	Gly	Trp	Thr	Pro 655	Pro
Ser	Ala	Pro	Thr 660	Leu	Val	Asn	Val	Thr 665	Ser	Glu	Ala	Pro	Thr 670	Gln	Leu
His	Val	Ser 675	Trp	Val	His	Ala	Ala 680	Gly	Asp	Arg	Ser	Ser 685	Tyr	Gln	Val
Thr	Leu 690	Tyr	Gln	Glu	Ser	Thr 695	Arg	Thr	Ala	Thr	Ser 700	Ile	Val	Gly	Pro
Lys 705	Ala	Asp	Ser	Thr	Ser 710	Phe	Trp	Gly	Leu	Thr 715	Pro	Gly	Thr	Lys	Tyr 720
Lys	Val	Glu	Ala	Ile 725	Ser	Trp	Ala	Gly	Pro 730	Leu	Tyr	Thr	Ala	Ala 735	Ala
Asn	Val	Ser	Ala 740	Trp	Thr	Tyr	Pro	Leu 745	Thr	Pro	Asn	Glu	Leu 750	Leu	Ala
Ser	Met	Gln 755	Ala	Gly	Ser	Ala	Val 760	Val	Asn	Leu	Ala	Trp 765	Pro	Ser	Gly
Pro	Leu 770	Gly	Gln	Gly	Thr	Cys 775	His	Ala	Gln	Leu	Ser 780	Asp	Ala	Gly	His
Leu 785		Trp	Glu	Gln	Pro 790	Leu	Ser	Leu	Gly	Gln 795		Leu	Leu	Met	Leu 800
Arg	Asn	Leu	Ile	Pro 805	Gly	His	Thr	Val	Ser 810		Ser	Val	Lys	Cys 815	
Ala	Gly	Pro	Leu 820		Ala	Ser	Thr	His 825	Pro	Leu	Val	Leu	Ser 830		Glu
Pro	Gly	Pro 835		Glu	Asp	Val	Phe 840		Gln	Pro	Glu	Ala 845		Tyr	Leu
Ser	Leu 850		Trp	Thr	Met	Pro 855		Gly	Asp	Val	Ala 860		Cys	Leu	Val

- Glu Val Glu Gln Leu Val Pro Gly Gly Ser Ala His Phe Val Phe Gln 865 870 875 880
- Val Asn Thr Ser Glu Asp Ala Leu Leu Leu Pro Asn Leu Thr Pro Thr 885 890 895
- Thr Ser Tyr Arg Leu Ser Leu Thr Val Leu Gly Gly Asn Arg Gln Trp 900 905 910
- Ser Arg Ala Val Thr Leu Val Cys Thr Thr Ser Ala Glu Val Trp His 915 920 925
- Pro Pro Glu Leu Ala Glu Ala Pro Gln Val Glu Leu Gly Thr Gly Met 930 935 940
- Gly Val Thr Val Thr Arg Gly Met Phe Gly Lys Asp Asp Gly Gln Ile 945 950 955 960
- Gln Trp Tyr Gly Ile Ile Ala Thr Ile Asn Met Thr Leu Ala Gln Pro 965 970 975
- Ser Gln Glu Ala Ile Asn His Thr Trp Tyr Asp His Tyr Tyr Arg Gly 980 985 990
- His Asp Ser Tyr Leu Ala Leu Leu Phe Pro Asn Pro Phe Tyr Pro Glu
- Pro Trp Ala Val Pro Arg Ser Trp Thr Val Pro Val Gly Thr Glu 1010 1015 1020
- Asp Cys Asp Asn Thr Gln Glu Ile Cys Asn Gly His Leu Lys Pro 1025 1030 1035
- Gly Phe Gln Tyr Arg Phe Ser Ile Ala Ala Phe Ser Arg Leu Ser 1040 1045 1050
- Ser Pro Glu Thr Ile Leu Ala Phe Ser Ala Phe Ser Glu Pro Gln 1055 1060 1065
- Ala Ser Ile Ser Leu Val Ala Met Pro Leu Thr Val Met Met Gly 1070 1075 1080
- Thr Val Val Gly Cys Ile Ile Ile Val Cys Ala Val Leu Cys Leu 1085 1090 1095
- Leu Cys Arg Arg Arg Leu Lys Gly Pro Arg Ser Glu Lys Asn Gly 1100 1105 1110
- Phe Ser Gln Glu Leu Met Pro Tyr Asn Leu Trp Arg Thr His Arg 1115 1120 1125
- Pro Ile Pro Ser His Ser Phe Arg Gln Ser Tyr Glu Ala Lys Ser 1130 1135 1140
- Ala Arg Ala His Gln Ala Phe Phe Gln Glu Phe Glu Glu Leu Lys 1145 1150 1155
- Glu Val Gly Lys Asp Gln Pro Arg Leu Glu Ala Glu His Pro Ala 1160 1165 1170

Asn Ile Thr Lys Asn Arg Tyr Pro His Val Leu Pro Tyr Asp His 1180 1175 Ser Arg Val Arg Leu Thr Gln Leu Ser Gly Glu Pro His Ser Asp 1200 1195 Tyr Ile Asn Ala Asn Phe Ile Pro Gly Tyr Ser His Pro Gln Glu 1215 Ile Ile Ala Thr Gln Gly Pro Leu Lys Lys Thr Val Glu Asp Phe 1230 Trp Arg Leu Val Trp Glu Gln Gln Val His Val Ile Ile Met Leu 1240 Thr Val Gly Met Glu Asn Gly Arg Val Leu Cys Glu His Tyr Trp 1255 1250 Pro Val Asn Ser Thr Pro Val Thr His Gly His Ile Thr Thr His 1270 Leu Leu Ala Glu Glu Ser Glu Asp Glu Trp Thr Arg Arg Glu Phe 1285 1280 Gln Leu Gln His Gly Ala Glu Gln Lys Gln Arg Arg Val Lys Gln 1300 Leu Gln Phe Thr Trp Pro Asp His Ser Val Pro Glu Ala Pro 1315 1310 Ser Ser Leu Leu Ala Phe Val Glu Leu Val Gln Glu Glu Val Lys 1330 Ala Thr Gln Gly Lys Gly Pro Ile Leu Val His Cys Ser Ala Gly 1340 1345 Val Gly Arg Thr Gly Thr Phe Val Ala Leu Leu Pro Ala Val Arg 1360 Gln Leu Glu Glu Glu Gln Val Val Asp Val Phe Asn Thr Val Tyr 1370 1375 Ile Leu Arg Leu His Arg Pro Leu Met Ile Gln Thr Leu Ser Gln . 1390 Tyr Ile Phe Leu His Ser Cys Leu Leu Asn Lys Ile Leu Glu Gly 1400 Pro Ser Asp Ala Ser Asp Ser Gly Pro Ile Pro Val Met Asn Phe 1420 Ala Gln Ala Cys Ala Lys Arg Ala Ala Asn Ala Asn Ala Gly Phe 1430 Leu Lys Glu Tyr Arg Leu Leu Lys Gln Ala Ile Lys Asp Glu Thr 1450 Gly Ser Leu Leu Pro Ser Pro Asp Tyr Asn Gln Asn Ser Ile Ala 1465 1460 Ser Cys His His Ser Gln Glu Gln Leu Ala Leu Val Glu Glu Ser

1475 1480 1485

Pro Ala Asp Asn Met Leu Ala Ala Ser Leu Phe Pro Gly Gly Pro 1490 1495 1500

Ser Gly Arg Asp His Val Val Leu Thr Gly Ser Ala Gly Pro Lys 1505 1510 1515

Glu Leu Trp Glu Met Val Trp Glu His Gly Ala Tyr Val Leu Val 1520 1525 1530

Ser Leu Gly Leu Pro Asp Thr Lys Glu Lys Pro Gln Asp Ile Trp 1535 1540 1545

Pro Met Glu Met Gln Pro Ile Val Thr Asp Met Val Thr Val His 1550 1560

Arg Val Ala Glu Ser Asn Thr Ala Gly Trp Pro Ser Thr Leu Ile 1565 1570 1575

Arg Val Ile His Gly Asp Ser Gly Thr Glu Arg Gln Val Gln Cys 1580 1585 1590

Leu Gln Phe Pro His Cys Glu Thr Gly Ser Glu Leu Pro Ala Asn 1595 1600 1605

Thr Leu Leu Thr Phe Leu Asp Ala Val Gly Gln Cys Cys Ser Arg 1610 1615 1620

Gly Asn Ser Lys Lys Pro Gly Thr Leu Leu Ser His Ser Ser Lys 1625 1630 1635

Val Thr Asn Gln Leu Ser Thr Phe Leu Ala Met Glu Gln Leu Leu 1640 1650

Gln Gln Ala Gly Thr Glu Arg Thr Val Asp Val Phe Ser Val Ala 1655 1660 1665

Leu Lys Gln Thr Gln Ala Cys Gly Leu Lys Thr Pro Thr Leu Glu 1670 1675 1680

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Arg Leu Pro Arg Ala Arg Lys 1700 1705

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<400> 38

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Gln Gly Gly Gly Pro Leu Leu Ser Val Asn Val Ser Ser His Gly Lys

Ser	Thr 50	Ser	Leu	Phe	Leu	Ser 55	Trp	Val	Ala	Ala	Glu 60	Leu	Gly	Gly	Phe
Asp 65	Tyr	Ala	Leu	Ser	Leu 70	Arg	Ser	Val	Asp	Ser 75	Ser	Gly	Ser	Pro	Glu 80
Gly	Gln	Gln	Leu	Gln 85	Ala	His	Thr	Asn	Glu 90	Ser	Gly	Phe	Glu	Phe 95	His
Gly	Leu	Val	Pro 100	Gly	Ser	Arg	Tyr	Gln 105	Leu	Lys	Leu	Thr	Val 110	Leu	Arg
Pro	Cys	Trp 115	Gln	Asn	Val	Thr	Ile 120	Thr	Leu	Thr	Ala	Arg 125	Thr	Ala	Pro
Thr	Val 130	Val	Arg	Gly	Leu	Gln 135	Leu	His	Ser	Ala	Gly 140	Ser	Pro	Ala	Arg
Leu 145	Glu	Ala	Ser	Trp	Ser 150	Asp	Ala	Pro	Gly	Asp 155	Gln	Asp	Ser	Tyr	Gln 160
Leu	Leu	Leu	Tyr	His 165	Leu	Glu	Ser	Gln	Thr 170	Leu	Ala	Cys	Asn	Val 175	Ser
Val	Ser	Pro	Asp 180	Thr	Leu	Ser	Tyr	Ser 185	Phe	Gly	Asp	Leu	Leu 190	Pro	Gly
		195	Val				200					205			
Lys	Thr 210	Ser	Ile	Leu	Gln	Trp 215	Thr	Glu	Pro	Val	Pro 220	Pro	Asp	His	Leu
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			Ala	245					250					255	
			Thr 260					265					270		
		275	Leu				280					285			
	290		Pro			295					300				
305			Tyr		310					315					320
			Ser	325					330					335	
			Ser 340					345					350		
Glu	Cys	Asn	Ala	Val	Phe	Pro	Gly 360		Leu	Pro	Pro	Gly 365		Tyr	Thi

Leu Gln Leu Lys Val Leu Ala Gly Pro Tyr Asp Ala Trp Val Glu Gly 375 Ser Thr Trp Leu Ala Glu Ser Ala Ala Leu Pro Arg Glu Val Pro Gly 395 390 Ala Arg Leu Trp Leu Asp Gly Leu Glu Ala Ser Lys Gln Pro Gly Arg 410 Arg Ala Leu Leu Tyr Ser Asp Asp Ala Pro Gly Ser Leu Gly Asn Ile 425 Ser Val Pro Ser Gly Ala Thr His Val Ile Phe Cys Gly Leu Val Pro Gly Ala His Tyr Arg Val Asp Ile Ala Ser Ser Thr Gly Asp Ile Ser 455 Gln Ser Ile Ser Gly Tyr Thr Ser Pro Leu Pro Pro Gln Ser Leu Glu Val Ile Ser Arg Ser Ser Pro Ser Asp Leu Thr Ile Ala Trp Gly Pro 490 Ala Pro Gly Gln Leu Glu Gly Tyr Lys Val Thr Trp His Gln Asp Gly Ser Gln Arg Ser Pro Gly Asp Leu Val Asp Leu Gly Pro Asp Thr Leu 520 Ser Leu Thr Leu Lys Ser Leu Val Pro Gly Ser Ser Tyr Thr Val Ser 535 Ala Trp Ala Trp Ala Gly Asn Leu Gly Ser Asp Ser Gln Lys Ile His 555 Ser Cys Thr Arg Pro Ala Pro Pro Thr Asn Leu Ser Leu Gly Phe Ala 570 His Gln Pro Ala Ala Leu Lys Ala Ser Trp Tyr His Pro Pro Gly Gly Arg Asp Ala Phe His Leu Arg Leu Tyr Arg Leu Arg Pro Leu Thr Leu Glu Ser Glu Lys Val Leu Pro Arg Glu Ala Gln Asn Phe Ser Trp Ala 615 Gln Leu Thr Ala Gly Cys Glu Phe Gln Val Gln Leu Ser Thr Leu Trp 635 625 Gly Ser Glu Arg Ser Ser Ser Ala Asn Ala Thr Gly Trp Thr Pro Pro 650 645 Ser Ala Pro Thr Leu Val Asn Val Thr Ser Asp Ala Pro Thr Gln Leu 660

685

Gln Val Ser Trp Ala His Val Pro Gly Gly Arg Ser Arg Tyr Gln Val

680

675

- Thr Leu Tyr Gln Glu Ser Thr Arg Thr Ala Thr Ser Ile Met Gly Pro 695 Lys Glu Asp Gly Thr Ser Phe Leu Gly Leu Thr Pro Gly Thr Lys Tyr 715 Lys Val Glu Val Ile Ser Trp Ala Gly Pro Leu Tyr Thr Ala Ala Ala Asn Val Ser Ala Trp Thr Tyr Pro Leu Ile Pro Asn Glu Leu Leu Val Ser Met Gln Ala Gly Ser Ala Val Val Asn Leu Ala Trp Pro Ser Gly 760 Pro Leu Gly Gln Gly Ala Cys His Ala Gln Leu Ser Asp Ala Gly His Leu Ser Trp Glu Gln Pro Leu Lys Leu Gly Gln Glu Leu Phe Met Leu 795
- 790
- Arg Asp Leu Thr Pro Gly His Thr Ile Ser Met Ser Val Arg Cys Arg
- Ala Gly Pro Leu Gln Ala Ser Thr His Leu Val Val Leu Ser Val Glu 825
- Pro Gly Pro Val Glu Asp Val Leu Cys His Pro Glu Ala Thr Tyr Leu
- Ala Leu Asn Trp Thr Met Pro Ala Gly Asp Val Asp Val Cys Leu Val 855
- Val Val Glu Arg Leu Val Pro Gly Gly Gly Thr His Phe Val Phe Gln
- Val Asn Thr Ser Gly Asp Ala Leu Leu Leu Pro Asn Leu Met Pro Thr 890
- Thr Ser Tyr Arg Leu Ser Leu Thr Val Leu Gly Arg Asn Ser Arg Trp 905
- Ser Arg Ala Val Ser Leu Val Cys Ser Thr Ser Ala Glu Ala Trp His 920
- Pro Pro Glu Leu Ala Glu Pro Pro Gln Val Glu Leu Gly Thr Gly Met
- Gly Val Thr Val Met Arg Gly Met Phe Gly Lys Asp Asp Gly Gln Ile 955
- Gln Trp Tyr Gly Ile Ile Ala Thr Ile Asn Met Thr Leu Ala Gln Pro
- Ser Arg Glu Ala Ile Asn Tyr Thr Trp Tyr Asp His Tyr Tyr Arg Gly 985
- Cys Glu Ser Phe Leu Ala Leu Leu Phe Pro Asn Pro Phe Tyr Pro Glu
- Pro Trp Ala Gly Pro Arg Ser Trp Thr Val Pro Val Gly Thr Glu

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Gly	Phe 1040	Gln	Tyr	Arg	Phe	Ser 1045	Val	Val	Ala	Phe	Ser 1050	Arg	Leu	Asn
Thr	Pro 1055	Glu	Thr	Ile	Leu	Ala 1060	Phe	Ser	Ala	Phe	Ser 1065	Glu	Pro	Arg
Ala	Ser 1070	Ile	Ser	Leu	Ala	Ile 1075	Ile	Pro	Leu	Thr	Val 1080	Met	Leu	Gly
Ala	Val 1085	Val	Gly	Ser	Ile	Val 1090		Val	Cys	Ala	Val 1095	Leu	Cys	Leu
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Phe	Ser 1115	Lys	Glu	Leu	Met	Pro 1120		Asn	Leu	Trp	Arg 1125	Thr	His	Arg
Pro	Ile 1130	Pro	Ile	His	Ser	Phe 1135		Gln	Ser	Tyr	Glu 1140	Ala	Lys	Ser
Ala	His 1145	Ala	His	Gln	Thr	Phe 1150	Phe	Gln	Glu	Phe	Glu 1155	Glu	Leu	Lys
Glu	Val 1160	Gly	Lys	Asp	Gln	Pro 1165	Arg	Leu	Glu	Ala	Glu 1170	His	Pro	Asp
Asn	Ile 1175	Ile	Lys	Asn	Arg	Tyr 1180		His	Val	Leu	Pro 1185	Tyr	Asp	His
Ser	Arg 1190	Val	Arg	Leu	Thr	Gln 1195		Pro	Gly	Glu	Pro 1200		Ser	Asp
Tyr	Ile 1205	Asn	Ala	Asn	Phe	Ile 1210		Gly	Tyr	Ser	His 1215	Thr	Gln	Glu
Ile	Ile 1220	Ala	Thr	Gln	Gly	Pro 1225		Lys	Lys	Thr	Leu 1230	Glu	Asp	Phe
Trp	Arg 1235		Val	Trp	Glu	Gln 1240		Val	His	Val	Ile 1245	Ile	Met	Leu
Thr	Val 1250	_	Met	Glu	Asn	Gly 1255		Val	Leu	Cys	Glu 1260		Tyr	Trp
Pro	Ala 1265		Ser	Thr	Pro	Val 1270		His	Gly	His	Ile 1275		Ile	His
Leu	Leu 1280	Ala	Glu	Glu	Pro	Glu 1285		Glu	Trp	Thr	Arg 1290		Glu	Phe
Gln	Leu 1295		His	Gly	Thr	Glu 1300		Lys	Gln	Arg	Arg 1305		Lys	Gln
Leu	Gln 1310		Thr	Thr	Trp	Pro 1315		His	Ser	Val	Pro 1320		Ala	Pro

Ser Ser Leu Leu Ala Phe Val Glu Leu Val Gln Glu Gln Val Gln Ala Thr Gln Gly Lys Gly Pro Ile Leu Val His Cys Ser Ala Gly Val Gly Arg Thr Gly Thr Phe Val Ala Leu Leu Arg Leu Leu Arg Gln Leu Glu Glu Lys Val Ala Asp Val Phe Asn Thr Val Tyr Ile Leu Arg Leu His Arg Pro Leu Met Ile Gln Thr Leu Ser Gln Tyr Ile Phe Leu His Ser Cys Leu Leu Asn Lys Ile Leu Glu Gly Pro Pro Asp Ser Ser Asp Ser Gly Pro Ile Ser Val Met Asp Phe Ala Gln Ala Cys Ala Lys Arg Ala Ala Asn Ala Asn Ala Gly Phe Leu Lys Glu Tyr Lys Leu Leu Lys Gln Ala Ile Lys Asp Gly Thr Gly Ser Leu Leu Pro Pro Pro Asp Tyr Asn Gln Asn Ser Ile Val Ser Arg Arg His Ser Gln Glu Gln Phe Ala Leu Val Glu Glu Cys Pro Glu Asp Ser Met Leu Glu Ala Ser Leu Phe Pro Gly Gly Pro Ser Gly Cys Asp His Val Val Leu Thr Gly Ser Ala Gly Pro Lys Glu Leu Trp Glu Met Val Trp Glu His Asp Ala His Val Leu Val Ser Leu Gly Leu Pro Asp Thr Lys Glu Lys Pro Pro Asp Ile Trp Pro Val Glu Met Gln Pro Ile Val Thr Asp Met Val Thr Val His Arg Val Ser Glu Ser Asn Thr Thr Thr Gly Trp Pro Ser Thr Leu Phe Arg Val Ile His Gly Glu Ser Gly Lys Glu Arg Gln Val Gln Cys Leu Gln Phe Pro Cys Ser Glu Ser Gly Cys Glu Leu Pro Ala Asn Thr Leu Leu Thr Phe Leu Asp Ala Val Gly Gln Cys Cys Phe

- Arg Gly Lys Ser Lys Lys Pro Gly Thr Leu Leu Ser His Ser Ser 1625 1630 1635
- Lys Asn Thr Asn Gln Leu Gly Thr Phe Leu Ala Met Glu Gln Leu 1640 1650
- Leu Gln Gln Ala Gly Thr Glu Arg Thr Val Asp Val Phe Asn Val 1655 1660 1665
- Ala Leu Lys Gln Ser Gln Ala Cys Gly Leu Met Thr Pro Thr Leu 1670 1675 1680
- Glu Gln Tyr Ile Tyr Leu Tyr Asn Cys Leu Asn Ser Ala Leu Leu 1685 1690 1695
- Asn Gly Leu Pro Arg Ala Gly Lys Trp Pro Ala Pro Cys 1700 1705 1710
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- <211> 625
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- <213> HOMO SAPIENS
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- Arg Ser Phe Val Glu Tyr Asn Ser Trp His Val Leu Ser Ser Val Asn 35 40 45
- Ile Cys Cys Ser Lys Leu Val Lys Arg Arg Leu Gln Gln Gly Lys Val 50 60
- Thr Ile Ala Glu Leu Ile Gln Pro Ala Ala Arg Ser Gln Val Glu Ala 65 70 75 80
- Thr Glu Pro Gln Asp Val Val Val Tyr Asp Gln Ser Thr Arg Asp Ala $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$
- Ser Val Leu Ala Ala Asp Ser Phe Leu Ser Ile Leu Leu Ser Lys Leu 100 105 110
- Asp Gly Cys Phe Asp Ser Val Ala Ile Leu Thr Gly Gly Phe Ala Thr 115 120 125
- Phe Ser Ser Cys Phe Pro Gly Leu Cys Glu Gly Lys Pro Ala Ala Leu 130 135 140
- Leu Pro Met Ser Leu Ser Gln Pro Cys Leu Pro Val Pro Ser Val Gly 145 150 155 160
- Leu Thr Arg Ile Leu Pro His Leu Tyr Leu Gly Ser Gln Lys Asp Val 165 170 175
- Leu Asn Lys Asp Leu Met Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn 180 185 190

Ala Ser Asn Ser Cys Pro Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe Met Arg Val Pro Ile Asn Asp Asn Tyr Cys Glu Lys Leu Leu Pro Trp 215 Leu Asp Lys Ser Ile Glu Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys 230 235 Gln Val Ile Val His Cys Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile 250 Ala Ile Ala Tyr Ile Met Lys Thr Met Gly Met Ser Ser Asp Asp Ala 265 Tyr Arg Phe Val Lys Asp Arg Arg Pro Ser Ile Ser Pro Asn Phe Asn Phe Leu Gly Gln Leu Leu Glu Tyr Glu Arg Thr Leu Lys Leu Leu Ala 295 Ala Leu Gln Gly Asp Pro Gly Thr Pro Ser Gly Thr Pro Glu Pro Pro Pro Ser Pro Ala Ala Gly Ala Pro Leu Pro Arg Leu Pro Pro Pro Thr 330 Ser Glu Ser Ala Ala Thr Gly Asn Ala Ala Ala Arg Glu Gly Gly Leu 345 Ser Ala Gly Gly Glu Pro Pro Ala Pro Pro Thr Pro Pro Ala Thr Ser 360 Ala Leu Gln Gln Gly Leu Arg Gly Leu His Leu Ser Ser Asp Arg Leu 370 Gln Asp Thr Asn Arg Leu Lys Arg Ser Phe Ser Leu Asp Ile Lys Ser 395 Ala Tyr Ala Pro Ser Arg Arg Pro Asp Gly Pro Gly Pro Pro Asp Pro Gly Glu Ala Pro Lys Leu Cys Lys Leu Asp Ser Pro Ser Gly Ala Ala 425 Leu Gly Leu Ser Ser Pro Ser Pro Asp Ser Pro Asp Ala Ala Pro Glu Ala Arg Pro Arg Pro Arg Arg Pro Arg Pro Pro Ala Gly Ser Pro 455 Ala Arg Ser Pro Ala His Ser Leu Gly Leu Asn Phe Gly Asp Ala Ala 470 Arg Gln Thr Pro Arg His Gly Leu Ser Ala Leu Ser Ala Pro Gly Leu 490 Pro Gly Pro Gly Gln Pro Ala Gly Pro Gly Ala Trp Ala Pro Pro Leu

Asp Ser Pro Gly Thr Pro Ser Pro Asp Gly Pro Trp Cys Phe Ser Pro

515 520 525

Glu Gly Ala Gln Gly Ala Gly Gly Val Leu Phe Ala Pro Phe Gly Arg 530 535 540

Ala Gly Ala Pro Gly Pro Gly Gly Gly Ser Asp Leu Arg Arg Glu 545 550 560

Ala Ala Arg Ala Glu Pro Arg Asp Ala Arg Thr Gly Trp Pro Glu Glu 565 570 575

Pro Ala Pro Glu Thr Gln Phe Lys Arg Arg Ser Cys Gln Met Glu Phe 580 585 590

Glu Glu Gly Met Val Glu Gly Arg Ala Arg Gly Glu Glu Leu Ala Ala 595 600 605

Leu Gly Lys Gln Ala Ser Phe Ser Gly Ser Val Glu Val Ile Glu Val 610 620

Ser 625

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<212> PRT

<213> Mus musculus

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Arg Ser Phe Val Glu Tyr Asn Ser Cys His Val Leu Ser Ser Val Asn 35 40 45

Ile Cys Cys Ser Lys Leu Val Lys Arg Arg Leu Gln Gln Gly Lys Val
50 55 60

Thr Ile Ala Glu Leu Ile Gln Pro Ala Thr Arg Ser Gln Val Asp Ala 65 70 75 80

Thr Glu Pro Gln Asp Val Val Tyr Asp Gln Ser Thr Arg Asp Ala 85 90 95

Ser Val Leu Ala Ala Asp Ser Phe Leu Ser Ile Leu Leu Ser Lys Leu 100 105 110

Asp Gly Cys Phe Asp Ser Val Ala Ile Leu Thr Gly Gly Phe Ala Thr 115 120 125

Phe Ser Ser Cys Phe Pro Gly Leu Cys Glu Gly Lys Pro Ala Thr Leu 130 135 140

Pro Ser Met Ser Leu Ser Gln Pro Cys Leu Pro Val Pro Ser Val Gly 145 150 150 160

Leu Thr Arg Ile Leu Pro His Leu Tyr Leu Gly Ser Gln Lys Asp Val

Leu	Asn	Lys	Asp 180	Leu	Met	Thr	Gln	Asn 185	Gly	Ile	Ser	Tyr	Val 190	Leu	Asn
Ala	Ser	Asn 195	Ser	Cys	Pro	Lys	Pro 200	Asp	Phe	Ile	Cys	Glu 205	Ser	Arg	Phe
Met	Arg 210	Ile	Pro	Ile	Asn	Asp 215	Asn	Tyr	Cys	Glu	Lys 220	Leu	Leu	Pro	Trp
Leu 225	Asp	Lys	Ser	Ile	Glu 230	Phe	Ile	Asp	Lys	Ala 235	Lys	Leu	Ser	Ser	Cys 240
Gln	Val	Ile	Val	His 245	Cys	Leu	Ala	Gly	Ile 250	Ser	Arg	Ser	Ala	Thr 255	Ile
Ala	Ile	Ala	Tyr 260	Ile	Met	Lys	Thr	Met 265	Gly	Met	Ser	Ser	Asp 270	Asp	Ala
Tyr	Arg	Phe 275	Val	Lys	Asp	Arg	Arg 280	Pro	Ser	Ile	Ser	Pro 285	Asn	Phe	Asn
Phe	Leu 290	Gly	Gln	Leu	Leu	Glu 295	Tyr	Glu	Arg	Ser	Leu 300	Lys	Leu	Leu	Ala
Ala 305	Leu	Gln	Thr	Asp	Gly 310	Pro	His	Leu	Gly	Thr 315	Pro	Glu	Pro	Leu	Met 320
Gly	Pro	Ala	Ala	Gly 325	Ile	Pro	Leu	Pro	Arg 330	Leu	Pro	Pro	Ser	Thr 335	Ser
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Arg 385	Leu	Gln	Asp	Thr	Asn 390	Arg	Leu	Lys	Arg	Ser 395	Phe	Ser	Leu	Asp	Ile 400
Lys	Ser	Ala	Tyr	Ala 405	Pro	Ser	Arg	Arg	Pro 410	Asp	Phe	Pro	Gly	Pro 415	Pro
Asp	Pro	Gly	Glu 420	Ala	Pro	Lys	Leu	Cys 425	Lys	Leu	Asp	Ser	Pro 430	Ser	Gly
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Pro	Glu 450	Cys	Arg	Pro	Arg	Pro 455	Arg	Arg	Arg	Arg	Pro 460	Pro	Ala	Ser	Ser
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Pro Phe Val Glu Tyr Asn Thr Ser His Ile Leu Glu Ala Ile Asn Ile 35 40 45

Asn Cys Ser Lys Leu Met Lys Arg Arg Leu Gln Gln Asp Lys Val Leu 50 55 60

Ile Thr Glu Leu Ile Gln His Ser Ala Lys His Lys Val Asp Ile Asp 65 70 75 80

Cys Ser Gln Lys Val Val Tyr Asp Gln Ser Ser Gln Asp Val Ala $85 \hspace{1.5cm} 90 \hspace{1.5cm} 95$

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	tgc Cys 50															729
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	agt Ser															825
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	tgc Cys															1017
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	cct Pro 210															1209
	tca Ser															1257
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					tca Ser											1785
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tcc Ser	act Thr	act Thr 435	ctg Leu	gat Asp	Glà aaa	acc Thr	aac Asn 440	Lys	cta Leu	tgc Cys	cag Gln	ttc Phe 445	tcc Ser	cct Pro	gtt Val	1881
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tac Tyr	cac His	acc Thr	agc Ser	ttc Phe	ctt Leu	ttc Phe	ggc Gly	ctt Leu	tcc Ser	acc Thr	agc Ser	cag Gln	cag Gln	cac His	ctc Leu	2121

515

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520

525

3272

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Pro Phe Val Glu Tyr Asn Thr Ser His Ile Leu Glu Ala Ile Asn Ile 35 40 45

Asn Cys Ser Lys Leu Met Lys Arg Arg Leu Gln Gln Asp Lys Val Leu 50 60

Ile Thr Glu Leu Ile Gln His Ser Ala Lys His Lys Val Asp Ile Asp 65 70 75 80

Cys Ser Gln Lys Val Val Val Tyr Asp Gln Ser Ser Gln Asp Val Ala 85 90 95

Ser Leu Ser Ser Asp Cys Phe Leu Thr Val Leu Leu Gly Lys Leu Glu
100 105 110

Lys Ser Phe Asn Ser Val His Leu Leu Ala Gly Gly Phe Ala Glu Phe 115 120 125

Ser Arg Cys Phe Pro Gly Leu Cys Glu Gly Lys Ser Thr Leu Val Pro 130 135 140

Thr Cys Ile Ser Gln Pro Cys Leu Pro Val Ala Asn Ile Gly Pro Thr 145 150 155 160

Arg Ile Leu Pro Asn Leu Tyr Leu Gly Cys Gln Arg Asp Val Leu Asn 165 170 175

Lys Glu Leu Ile Gln Gln Asn Gly Ile Gly Tyr Val Leu Asn Ala Ser

180 185 190

Tyr Thr Cys Pro Lys Pro Asp Phe Ile Pro Glu Ser His Phe Leu Arg 195 200 205

Val Pro Val Asn Asp Ser Phe Cys Glu Lys Ile Leu Pro Trp Leu Asp 210 215 220

Lys Ser Val Asp Phe Ile Glu Lys Ala Lys Ala Ser Asn Gly Cys Val 225 230 235 240

Leu Val His Cys Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile 245 250 255

Ala Tyr Ile Met Lys Arg Met Asp Met Ser Leu Asp Glu Ala Tyr Arg 260 265 270

Phe Val Lys Glu Lys Arg Pro Thr Ile Ser Pro Asn Phe Asn Phe Leu 275 280 285

Gly Gln Leu Leu Asp Tyr Glu Lys Lys Ile Lys Asn Gln Thr Gly Ala 290 295 300

Ser Gly Pro Lys Ser Lys Leu Lys Leu His Leu Glu Lys Pro Asn 305 310 315

Glu Pro Val Pro Ala Val Ser Glu Gly Gly Gln Lys Ser Glu Thr Pro 325 330 335

Leu Ser Pro Pro Cys Ala Asp Ser Ala Thr Ser Glu Ala Ala Gly Gln 340 345 350

Arg Pro Val His Pro Ala Ser Val Pro Ser Val Pro Ser Val Gln Pro 355 360 365

Ser Leu Leu Glu Asp Ser Pro Leu Val Gln Ala Leu Ser Gly Leu His  $370 \hspace{1.5cm} 375 \hspace{1.5cm} 380$ 

Leu Ser Ala Asp Arg Leu Glu Asp Ser Asn Lys Leu Lys Arg Ser Phe 385 390 395 400

Ser Leu Asp Ile Lys Ser Val Ser Tyr Ser Ala Ser Met Ala Ala Ser 405 410 415

Leu His Gly Phe Ser Ser Ser Glu Asp Ala Leu Glu Tyr Tyr Lys Pro 420 425 430

Ser Thr Thr Leu Asp Gly Thr Asn Lys Leu Cys Gln Phe Ser Pro Val 435 440 445

Gln Glu Leu Ser Glu Gln Thr Pro Glu Thr Ser Pro Asp Lys Glu Glu 450 460

Ala Ser Ile Pro Lys Lys Leu Gln Thr Ala Arg Pro Ser Asp Ser Gln 465 470 475 480

Ser Lys Arg Leu His Ser Val Arg Thr Ser Ser Ser Gly Thr Ala Gln \$485\$

Arg Ser Leu Leu Ser Pro Leu His Arg Ser Gly Ser Val Glu Asp Asn 500 505 510

Tyr His Thr Ser Phe Leu Phe Gly Leu Ser Thr Ser Gln Gln His Leu 515 520 525

Thr Lys Ser Ala Gly Leu Gly Leu Lys Gly Trp His Ser Asp Ile Leu 530 535 540

Ala Pro Gln Thr Ser Thr Pro Ser Leu Thr Ser Ser Trp Tyr Phe Ala 545 550 555 560

Thr Glu Ser Ser His Phe Tyr Ser Ala Ser Ala Ile Tyr Gly Gly Ser 565 570 575

Ala Ser Tyr Ser Ala Tyr Ser Cys Ser Gln Leu Pro Thr Cys Gly Asp 580 585 590

Gln Val Tyr Ser Val Arg Arg Gln Lys Pro Ser Asp Arg Ala Asp 595 600 605

Ser Arg Arg Ser Trp His Glu Glu Ser Pro Phe Glu Lys Gln Phe Lys 610 620

Arg Arg Ser Cys Gln Met Glu Phe Gly Glu Ser Ile Met Ser Glu Asn 625 630 635 640

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Arg Ser Phe Val Glu Tyr Asn Ser Trp His Val Leu Ser Ser Val Asn 35 40 45

Ile Cys Cys Ser Lys Leu Val Lys Arg Arg Leu Gln Gln Gly Lys Val 50 55 60

Thr Ile Ala Glu Leu Ile Gln Pro Ala Ala Arg Ser Gln Val Glu Ala 65 70 75 80

Thr Glu Pro Gln Asp Val Val Tyr Asp Gln Ser Thr Arg Asp Ala
85 90 95

Ser Val Leu Ala Ala Asp Ser Phe Leu Ser Ile Leu Leu Ser Lys Leu 100 105 110

Asp Gly Cys Phe Asp Ser Val Ala Ile Leu Thr Gly Gly Phe Ala Thr 115 120 125

Phe Ser Ser Cys Phe Pro Gly Leu Cys Glu Gly Lys Pro Ala Ala Leu 130 135 140

Leu Pro Met Ser Leu Ser Gln Pro Cys Leu Pro Val Pro Ser Val Gly
145 150 155 160

Leu Thr Arg Ile Leu Pro His Leu Tyr Leu Gly Ser Gln Lys Asp Val 165 170 175

Leu Asn Lys Asp Leu Met Thr Gln Asn Gly Ile Ser Tyr Val Leu Asn 180 185 190

Ala Ser Asn Ser Cys Pro Lys Pro Asp Phe Ile Cys Glu Ser Arg Phe 195 200 205

Met Arg Val Pro Ile Asn Asp Asn Tyr Cys Glu Lys Leu Pro Trp 210 215 220

Leu Asp Lys Ser Ile Glu Phe Ile Asp Lys Ala Lys Leu Ser Ser Cys 235 230 235

Gln Val Ile Val His Cys Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile 245 250 255

Ala Ile Ala Tyr Ile Met Lys Thr Met Gly Met Ser Ser Asp Asp Ala 265 Tyr Arg Phe Val Lys Asp Arg Arg Pro Ser Ile Ser Pro Asn Phe Asn 280 Phe Leu Gly Gln Leu Leu Glu Tyr Glu Arg Thr Leu Lys Leu Leu Ala 295 Ala Leu Gln Gly Asp Pro Gly Thr Pro Ser Gly Thr Pro Glu Pro Pro Pro Ser Pro Ala Ala Gly Ala Pro Leu Pro Arg Leu Pro Pro Pro Thr Ser Glu Ser Ala Ala Thr Gly Asn Ala Ala Ala Arg Glu Gly Gly Leu 345 Ser Ala Gly Gly Glu Pro Pro Ala Pro Pro Thr Pro Pro Ala Thr Ser 360 Ala Leu Gln Gln Gly Leu Arg Gly Leu His Leu Ser Ser Asp Arg Leu 375 Gln Asp Thr Asn Arg Leu Lys Arg Ser Phe Ser Leu Asp Ile Lys Ser 395 Ala Tyr Ala Pro Ser Arg Arg Pro Asp Gly Pro Gly Pro Pro Asp Pro 410 Gly Glu Ala Pro Lys Leu Cys Lys Leu Asp Ser Pro Ser Gly Ala Ala 425 Leu Gly Leu Ser Ser Pro Ser Pro Asp Ser Pro Asp Ala Ala Pro Glu 440 Ala Arg Pro Arg Pro Arg Arg Pro Arg Pro Pro Ala Gly Ser Pro Ala Arg Ser Pro Ala His Ser Leu Gly Leu Asn Phe Gly Asp Ala Ala 475 Arg Gln Thr Pro Arg His Gly Leu Ser Ala Leu Ser Ala Pro Gly Leu Pro Gly Pro Gly Gln Pro Ala Gly Pro Gly Ala Trp Ala Pro Pro Leu 505 Asp Ser Pro Gly Thr Pro Ser Pro Asp Gly Pro Trp Cys Phe Ser Pro Glu Gly Ala Gln Gly Ala Gly Gly Val Leu Phe Ala Pro Phe Gly Arg 535 Ala Gly Ala Pro Gly Pro Gly Gly Gly Ser Asp Leu Arg Arg Glu 545 Ala Ala Arg Ala Glu Pro Arg Asp Ala Arg Thr Gly Trp Pro Glu Glu

570

565

620

615

Ser 625

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<213> Homo sapiens

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Ser Lys Thr Val Ala Trp Leu Asn Glu Gln Leu Glu Leu Gly Asn Glu 20 25 30

Arg Leu Leu Met Asp Cys Arg Pro Gln Glu Leu Tyr Glu Ser Ser 35 40 45

His Ile Glu Ser Ala Ile Asn Val Ala Ile Pro Gly Ile Met Leu Arg  $50 \hspace{1.5cm} 55 \hspace{1.5cm} 60$ 

Arg Leu Gln Lys Gly Asn Leu Pro Val Arg Ala Leu Phe Thr Arg Gly 75 80

Glu Asp Arg Asp Arg Phe Thr Arg Arg Cys Gly Thr Asp Thr Val Val 85 90 95

Leu Tyr Asp Glu Ser Ser Ser Asp Trp Asn Glu Asn Thr Gly Gly Glu
100 105 110

Ser Leu Leu Gly Leu Leu Lys Lys Leu Lys Asp Glu Gly Cys Arg 115 120 125

Ala Phe Tyr Leu Glu Gly Gly Phe Ser Lys Phe Gln Ala Glu Phe Ser 130 135

Leu His Cys Glu Thr Asn Leu Asp Gly Ser Cys Ser Ser Ser Pro 145 150 155 160

Pro Leu Pro Val Leu Gly Leu Gly Gly Leu Arg Ile Ser Ser Asp Ser

Ser Ser Asp Ile Glu Ser Asp Leu Asp Arg Asp Pro Asn Ser Ala Thr 180 185 190

Asp Ser Asp Gly Ser Pro Leu Ser Asn Ser Gln Pro Ser Phe Pro Val 195 200 205

Glu Ile Leu Pro Phe Leu Tyr Leu Gly Cys Ala Lys Asp Ser Thr Asn 210 215 220

- Leu Asp Val Leu Glu Glu Phe Gly Ile Lys Tyr Ile Leu Asn Val Thr 225 230 235 240
- Pro Asn Leu Pro Asn Leu Phe Glu Asn Ala Gly Glu Phe Lys Tyr Lys 245 250 255
- Gln Ile Pro Ile Ser Asp His Trp Ser Gln Asn Leu Ser Gln Phe Phe 260 265 270
- Pro Glu Ala Ile Ser Phe Ile Asp Glu Ala Arg Gly Lys Asn Cys Gly 275 280 285
- Val Leu Val His Cys Leu Ala Gly Ile Ser Arg Ser Val Thr Val Thr 290 295 300
- Val Ala Tyr Leu Met Gln Lys Leu Asn Leu Ser Met Asn Asp Ala Tyr 305 310 315 320
- Asp Ile Val Lys Met Lys Lys Ser Asn Ile Ser Pro Asn Phe Asn Phe 325 330 335
- Met Gly Gln Leu Leu Asp Phe Glu Arg Thr Leu Gly Leu Ser Ser Pro 340 345 350
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- Gly Ser Ala Asn Pro Gly Ser Asn Ser His Pro Pro Val Ile Ala Thr 35 40 45
- Thr Val Val Ser Leu Lys Ala Ala Asn Leu Thr Tyr Met Pro Ser Ser 50 55 60
- Ser Gly Ser Ala Arg Ser Leu Asn Cys Gly Cys Ser Ser Ala Ser Cys 65 70 75 80
- Cys Thr Val Ala Thr Tyr Asp Lys Asp Asn Gln Ala Gln Thr Gln Ala 85 90 95
- Ile Ala Ala Gly Thr Thr Thr Thr Ala Ile Gly Thr Ser Thr Thr Cys
  100 105 110
- Pro Ala Asn Gln Met Val Asn Asn Glu Asn Thr Gly Ser Leu Ser 115 120 125

- Pro Ser Ser Gly Val Gly Ser Pro Val Ser Gly Thr Pro Lys Gln Leu 130 135 140
- Ala Ser Ile Lys Ile Ile Tyr Pro Asn Asp Leu Ala Lys Lys Met Thr 145 150 155 160
- Lys Cys Ser Lys Ser His Leu Pro Ser Gln Gly Pro Val Ile Ile Asp 165 170 175
- Cys Arg Pro Phe Met Glu Tyr Asn Lys Ser His Ile Gln Gly Ala Val 180 185 190
- His Ile Asn Cys Ala Asp Lys Ile Ser Arg Arg Leu Gln Gln Gly
  195 200 205
- Lys Ile Thr Val Leu Asp Leu Ile Ser Cys Arg Glu Gly Lys Asp Ser 210 225 220
- Phe Lys Arg Ile Phe Ser Lys Glu Ile Ile Val Tyr Asp Glu Asn Thr 225 230 235 240
- Asn Glu Pro Ser Arg Val Met Pro Ser Gln Pro Leu His Ile Val Leu 245 250 255
- Glu Ser Leu Lys Arg Glu Gly Lys Glu Pro Leu Val Leu Lys Gly Gly 260 265 270
- Leu Ser Ser Phe Lys Gln Asn His Glu Asn Leu Cys Asp Asn Ser Leu 275 280 285
- Gln Leu Gln Glu Cys Arg Glu Val Gly Gly Gly Ala Ser Ala Ala Ser 290 295 300
- Ser Leu Leu Pro Gln Pro Ile Pro Thr Thr Pro Asp Ile Glu Asn Ala 305 310 315 320
- Glu Leu Thr Pro Ile Leu Pro Phe Leu Phe Leu Gly Asn Glu Gln Asp 325 330 335
- Ala Gln Asp Leu Asp Thr Met Gln Arg Leu Asn Ile Gly Tyr Val Ile 340 345 350
- Asn Val Thr Thr His Leu Pro Leu Tyr His Tyr Glu Lys Gly Leu Phe 355 360 365
- Asn Tyr Lys Arg Leu Pro Ala Thr Asp Ser Asn Lys Gln Asn Leu Arg 370 375 380
- Gln Tyr Phe Glu Glu Ala Phe Glu Phe Ile Glu Glu Ala His Gln Cys 385 390 395 400
- Gly Lys Gly Leu Leu Ile His Cys Gln Ala Gly Val Ser Arg Ser Ala 405 410 415
- Thr Ile Val Ile Ala Tyr Leu Met Lys His Thr Arg Met Thr Met Thr 420 425 430
- Asp Ala Tyr Lys Phe Val Lys Gly Lys Arg Pro Ile Ile Ser Pro Asn 435
- Leu Asn Phe Met Gly Gln Leu Leu Glu Phe Glu Glu Asp Leu Asn Asn

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Lys Ser Phe Asn Ser Val His Leu Leu Ala Gly Gly Phe Ala Glu Phe 115 120 125

Ser Arg Cys Phe Pro Gly Leu Cys Glu Gly Lys Ser Thr Leu Val Pro 130 135 140

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Arg	Ile	Leu	Pro	Asn 165	Leu	Tyr	Leu	Gly	Cys 170	Gln	Arg	Asp	Val	Leu 175	Asn

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Val Pro Val Asn Asp Ser Phe Cys Glu Lys Ile Leu Pro Trp Leu Asp 210 215 220

Lys Ser Val Asp Phe Ile Glu Lys Ala Lys Ala Ser Asn Gly Cys Val 235 230 235

Leu Val His Cys Leu Ala Gly Ile Ser Arg Ser Ala Thr Ile Ala Ile 245 250 255

Ala Tyr Ile Met Lys Arg Met Asp Met Ser Leu Asp Glu Ala Tyr Arg 260 265 270

Phe Val Lys Glu Lys Arg Pro Thr Ile Ser Pro Asn Phe Asn Phe Leu 275 280 285

Gly Gln Leu Leu Asp Tyr Glu Lys Lys Ile Lys Asn Gln Thr Gly Ala 290 295 300

Ser Gly Pro Lys Ser Lys Leu Lys Leu Leu His Leu Glu Lys Pro Asn 315 320

Glu Pro Val Pro Ala Val Ser Glu Gly Gly Gln Lys Ser Glu Thr Pro 325 330 335

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Arg Pro Val His Pro Ala Ser Val Pro Ser Val Pro Ser Val Gln Pro 355 360 365

Ser Leu Leu Glu Asp Ser Pro Leu Val Gln Ala Leu Ser Gly Leu His 370 380

Leu Ser Ala Asp Arg Leu Glu Asp Ser Asn Lys Leu Lys Arg Ser Phe

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Lai.
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123
E ::

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Tyr His Thr Ser Phe Leu Phe Gly Leu Ser Thr Ser Gln Gln His Leu 515 520 525

Thr Lys Ser Ala Gly Leu Gly Leu Lys Gly Trp His Ser Asp Ile Leu 530 540

Ala Pro Gln Thr Ser Thr Pro Ser Leu Thr Ser Ser Trp Tyr Phe Ala 545 550 555 560

Thr Glu Ser Ser His Phe Tyr Ser Ala Ser Ala Ile Tyr Gly Gly Ser 565 570 575

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Gln Val Tyr Ser Val Arg Arg Gln Lys Pro Ser Asp Arg Ala Asp 595 600 605

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Ala Gln Phe Leu Val Glu His Glu Thr Gln Asp Ser Lys Asp Leu Ser
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aat tcc cga gat gga gct tgg gaa aga ata tgt ggc gag agg gac cct 2094
Asn Ser Arg Asp Gly Ala Trp Glu Arg Ile Cys Gly Glu Arg Asp Pro
475
480
485

ttc atc cta tgc agc ttg atg tgg tct tgg gtg gag caa ctg aag gag
Phe Ile Leu Cys Ser Leu Met Trp Ser Trp Val Glu Gln Leu Lys Glu
490 500 505

cct gta atc acc aaa gag gat gtg gac atg ttg gtt gac agg cga gca 2190
Pro Val Ile Thr Lys Glu Asp Val Asp Met Leu Val Asp Arg Ala
510 515 520

gat gcc gca gaa gca ctt ttt tta tta gag aag gga cag cac cag act
Asp Ala Ala Glu Ala Leu Phe Leu Leu Glu Lys Gly Gln His Gln Thr
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11e Leu Cys Val Leu His Cys Ile Val Asn Leu Gln Thr Ile Pro Val

540

540

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Ala Leu Gl<br/>n Glu Gly Lys Val Ala Ile His Cys His Ala Gly Leu Gly<br/> 35 40 45

Arg Thr Gly Val Leu Ile Ala Cys Tyr Leu Val Phe Ala Thr Arg Met 50 55 60

Thr Ala Asp Gln Ala Ile Ile Phe Val Arg Ala Lys Arg Pro Asn Ser 70 75 80

Ile Gln Thr Arg Gly Gln Leu Leu Cys Val Arg Glu Phe Thr Gln Phe 85 90 95

Leu Thr Pro Leu Arg Asn Ile Phe Ser Cys Cys Asp Pro Lys Ala His 100 105 110

Ala Val Thr Leu Pro Gln Tyr Leu Ile Arg Gln Arg His Leu Leu His 115 120 125

Gly Tyr Glu Ala Arg Leu Leu Lys His Val Pro Lys Ile Ile His Leu 130 135 140

Val Cys Lys Leu Leu Leu Asp Leu Ala Glu Asn Arg Pro Val Met Met

Lys	Asp	Val	Ser	Glu 165	Gly	Pro	Gly	Leu	Ser 170	Ala	Glu	Ile	Glu	Lys 175	Thr
Met	Ser	Glu	Met 180	Val	Thr	Met	Gln	Leu 185	Asp	Lys	Glu	Leu	Leu 190	Arg	His
Asp	Ser	Asp 195	Val	Ser	Asn	Pro	Pro 200	Asn	Pro	Thr	Ala	Val 205	Ala	Ala	Asp
Phe	Asp 210	Asn	Arg	Gly	Met	Ile 215	Phe	Ser	Asn	Glu	Gln 220	Gln	Phe	Asp	Pro
Leu 225	Trp	Lys	Arg	Arg	Asn 230	Val	Glu	Cys	Leu	Gln 235	Pro	Leu	Thr	His	Leu 240
Lys	Arg	Arg	Leu	Ser 245	Tyr	Ser	Asp	Ser	Asp 250	Leu	Lys	Arg	Ala	Glu 255	Asn
Leu	Leu	Glu	Gln 260	Gly	Glu	Thr	Pro	Gln 265	Thr	Val	Pro	Ala	Gln 270	Ile	Leu
Val	Gly	His 275	Lys	Pro	Arg	Gln	Gln 280	Lys	Leu	Ile	Ser	His 285	Cys	Tyr	Ile
Pro	Gln 290	Ser	Pro	Glu	Pro	Asp 295	Leu	His	Lys	Glu	Ala 300	Leu	Val	Arg	Ser
Thr 305	Leu	Ser	Phe	Trp	Ser 310	Gln	Ser	Lys	Phe	Gly 315	Gly	Leu	Glu	Gly	Leu 320
Lys	Asp	Asn	Gly	Ser 325	Pro	Ile	Phe	His	Gly 330	Arg	Ile	Ile	Pro	Lys 335	Glu
Ala	Gln	Gln	Ser 340	Gly	Ala	Phe	Ser	Ala 345	Asp	Val	Ser	Gly	Ser 350	His	Ser
Pro	Gly	Glu 355	Pro	Val	Ser	Pro	Ser 360	Phe	Ala	Asn	Val	His 365	Lys	Asp	Pro
Asn	Pro 370	Ala	His	Gln	Gln	Val 375	Ser	His	Cys	Gln	Cys 380	Lys	Thr	His	Gly
Val 385	Gly	Ser	Pro	Gly	Ser 390	Val	Arg	Gln	Asn	Ser 395	Arg	Thr	Pro	Arg	Ser 400

Pro Leu Asp Cys Gly Ser Ser Pro Lys Ala Gln Phe Leu Val Glu His
405 410 415

Glu Thr Gln Asp Ser Lys Asp Leu Ser Glu Ala Ala Ser His Ser Ala 420 425 430

Leu Gln Ser Glu Leu Ser Ala Glu Ala Arg Arg Ile Leu Ala Ala Lys 435 440 445

Ala Leu Ala Asn Leu Asn Glu Ser Val Glu Lys Glu Glu Leu Lys Arg 450 455 460

Lys Val Glu Met Trp Gln Lys Glu Leu Asn Ser Arg Asp Gly Ala Trp 465 470 475 480

Glu Arg Ile Cys Gly Glu Arg Asp Pro Phe Ile Leu Cys Ser Leu Met 485 490 495

Trp Ser Trp Val Glu Gln Leu Lys Glu Pro Val Ile Thr Lys Glu Asp  $500 \hspace{1.5cm} 505 \hspace{1.5cm} 510$ 

Val Asp Met Leu Val Asp Arg Arg Ala Asp Ala Ala Glu Ala Leu Phe 515 520 525

Leu Leu Glu Lys Gly Gln His Gln Thr Ile Leu Cys Val Leu His Cys 530 540

Ile Val Asn Leu Gln Thr Ile Pro Val Asp Val Glu Glu Ala Phe Leu 545 550 555 560

Ala His Ala Ile Lys Ala Phe Thr Lys Val Asn Phe Asp Ser Glu Asn 565 570 575

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Asp Leu Gly Val Arg His Leu Val Ser Leu Thr Glu Arg Gly Pro Pro 35 40 45

His Ser Asp Ser Cys Pro Gly Leu Thr Leu His Arg Leu Arg Ile Pro 50 55 60

Asp Phe Cys Pro Pro Ala Pro Asp Gln Ile Asp Arg Phe Val Gln Ile 65 70 75 80

Val Asp Glu Ala Asn Ala Arg Gly Glu Ala Val Gly Val His Cys Ala 85 90 95

Leu Gly Phe Gly Arg Thr Gly Thr Met Leu Ala Cys Tyr Leu Val Lys 100 105 110

Glu Arg Gly Leu Ala Ala Gly Asp Ala Ile Ala Glu Ile Arg Arg Leu 115 120 125

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Gln Glu Gly Lys Val Ile His Cys His Ala Gly Leu Gly Arg Thr Gly 35 40 45

Val Leu Ile Ala Tyr Leu Val Phe Ala Thr Arg Met Thr Ala Asp Gln

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Ile	Ser	Cys	Cys 100	Asp	Pro	Lys	Ala	His 105	Ala	Val	Thr	Leu	Pro 110	Gln	Tyr
Ile	Arg	Gln 115	Arg	His	Leu	Leu	His 120	Gly	Tyr	Glu	Ala	Arg 125	Leu	Leu	His
Val	Pro 130	Lys	Ile	Ile	His	Leu 135	Val	Cys	Lys	Leu	Leu 140	Leu	Asp	Ala	Glu
Asn 145	Arg	Pro	Val	Met	Met 150	Lys	Asp	Val	Ser	Glu 155	Gly	Pro	Leu	Ser	Ala 160
Glu	Ile	Glu	Lys	Thr 165	Met	Ser	Glu	Met	Val 170	Thr	Met	Leu	Asp	Lys 175	Glu
Leu	Leu	Arg	His 180	Asp	Ser	Asp	Val	Ser 185	Asn	Pro	Asn	Pro	Thr 190	Ala	Val
Ala	Ala	Asp 195	Phe	Asp	Asn	Arg	Gly 200	Met	Ile	Ser	Asn	Glu 205	Gln	Gln	Phe
Asp	Pro 210	Leu	Trp	Lys	Arg	Arg 215	Asn	Val	Cys	Leu	Gln 220	Pro	Leu	Thr	His
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Leu	Leu	Glu	Gln	Gly 245	Glu	Thr	Gln	Thr	Val 250	Pro	Ala	Gln	Ile	Leu 255	Val
Gly	His	Lys	Pro 260	Arg	Gln	Lys	Leu	Ile 265	Ser	His	Cys	Tyr	Ile 270	Pro	Gln
Ser	Pro	Glu 275	Pro	Asp	His	Lys	Glu 280	Ala	Leu	Val	Arg	Ser 285	Thr	Leu	Ser
Phe	Trp 290	Ser	Gln	Lys	Phe	Gly 295	Gly	Leu	Glu	Gly	Leu 300	Lys	Asp	Asn	Gly
Ser 305	Pro	Ile	His	Gly	Arg 310	Ile	Ile	Pro	Lys	Glu 315	Ala	Gln	Gln	Ser	Gly 320
Ala	Phe	Ala	Asp	Val 325	Ser	Gly	Ser	His	Ser 330	Pro	Gly	Glu	Pro	Val 335	Ser
Pro	Phe	Ala	Asn 340	Val	His	Lys	Asp	Pro 345	Asn	Pro	Ala	His	Gln 350	Gln	Val
His	Cys	Gln 355	Cys	Lys	Thr	His	Gly 360	Val	Gly	Ser	Pro	Gly 365	Ser	Val	Gln
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Gln I 385	Phe	Leu	Val	Glu	His 390	Glu	Thr	Gln	Asp	Ser 395	Lys	Asp	Ser	Glu	Ala 400	
Alas	Ser	His	Ser	Ala 405	Leu	Gln	Ser	Glu	Leu 410	Ser	Ala	Ala	Arg	Arg 415	Ile	
Leu A	Ala	Ala	Lys 420	Ala	Leu	Ala	Asn	Leu 425	Asn	Glu	Val	Glu	Lys 430	Glu	Glu	
Leu l	Lys	Arg 435	Lys	Val	Glu	Met	Trp 440	Gln	Lys	Leu	Asn	Ser 445	Arg	Asp	Gly	
Ala 5	Trp 450	Glu	Arg	Ile	Cys	Gly 455	Glu	Arg	Pro	Phe	Ile 460	Leu	Cys	Ser	Leu	
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Ser Val Ser His Ala Glu Gly Asn Pro Thr Phe Pro Glu Arg Lys Arg 65 70 75 80	

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395

Asp Lys Glu Leu Leu Arg His Asp Ser Asp Val Ser Asn Pro Pro Asn

Pro Thr Ala Val Ala Ala Asp Phe Asp Asn Arg Gly Met Ile Phe Ser Asn Glu Gln Gln Phe Asp Pro Leu Trp Lys Arg Arg Asn Val Glu Cys Leu Gln Pro Leu Thr His Leu Lys Arg Arg Leu Ser Tyr Ser Asp Ser Asp Leu Lys Arg Ala Glu Asn Leu Leu Glu Gln Gly Glu Thr Pro Gln Thr Val Pro Ala Gln Ile Leu Val Gly His Lys Pro Arg Gln Gln Lys Leu Ile Ser His Cys Tyr Ile Pro Gln Ser Pro Glu Pro Asp Leu His Lys Glu Ala Leu Val Arg Ser Thr Leu Ser Phe Trp Ser Gln Ser Lys Phe Gly Gly Leu Glu Gly Leu Lys Asp Asn Gly Ser Pro Ile Phe His Gly Arg Ile Ile Pro Lys Glu Ala Gln Gln Ser Gly Ala Phe Ser Ala Asp Val Ser Gly Ser His Ser Pro Gly Glu Pro Val Ser Pro Ser Phe Ala Asn Val His Lys Asp Pro Asn Pro Ala His Gln Gln Val Ser His Cys Gln Cys Lys Thr His Gly Val Gly Ser Pro Gly Ser Val Arg Gln Asn Ser Arg Thr Pro Arg Ser Pro Leu Asp Cys Gly Ser Ser Pro Lys Ala Gln Phe Leu Val Glu His Glu Thr Gln Asp Ser Lys Asp Leu Ser Glu Ala Ala Ser His Ser Ala Leu Gln Ser Glu Leu Ser Ala Glu Ala Arg Arg Ile Leu Ala Ala Lys Ala Leu Ala Asn Leu Asn Glu Ser Val Glu Lys Glu Glu Leu Lys Arg Lys Val Glu Met Trp Gln Lys Glu Leu Asn Ser Arg Asp Gly Ala Trp Glu Arg Ile Cys Gly Glu Arg Asp Pro Phe Ile Leu Cys Ser Leu Met Trp Ser Trp Val Glu Gln Leu Lys Glu Pro Val Ile Thr Lys Glu Asp Val Asp Met Leu Val Asp Arg Arg Ala 

Asp Ala Ala Glu Ala Leu Phe Leu Leu Glu Lys Gly Gln His Gln Thr

į.

725 730 735

Ile Leu Cys Val Leu His Cys Ile Val Asn Leu Gln Thr Ile Pro Val 740 745 750

Asp Val Glu Glu Ala Phe Leu Ala His Ala Ile Lys Ala Phe Thr Lys 755 760 765

Val Asn Phe Asp Ser Glu Asn Gly Pro Thr Val Tyr Asn Thr Leu Lys
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Lys Ile Phe Lys His Thr Leu Glu Glu Lys Arg Lys Met Thr Lys Asp 785 790 795 800

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Val Gly Glu Arg Leu Arg His Val Ile Pro Gly His Met Ala Cys Ser 35 40 45

Met Ala Cys Gly Gly Arg Ala Cys Lys Tyr Glu Asn Pro Ala Arg Trp 50 55 60

Ser Glu Gln Gln Gln Ala Ile Lys Gly Val Tyr Ser Ser Trp Val Thr 65 70 75 80

Asp Asn Ile Leu Ala Met Ala Arg Pro Ser Ser Glu Leu Leu Glu Lys 85 90 95

Tyr His Ile Ile Asp Gln Phe Leu Ser His Gly Ile Lys Thr Ile Ile 100 105 110

Asn Leu Gln Arg Pro Gly Glu His Ala Ser Cys Gly Asn Pro Leu Glu 115 120 125

Gln Glu Ser Gly Phe Thr Tyr Leu Pro Glu Ala Phe Met Glu Ala Gly 130 135

Ile Tyr Phe Tyr Asn Phe Gly Trp Lys Asp Tyr Gly Val Ala Ser Leu 145 150 150 160

Thr Thr Ile Leu Asp Met Val Lys Val Met Thr Phe Ala Leu Gln Glu 165 170 175

Gly Lys Val Ala Ile His Cys His Ala Gly Leu Gly Arg Thr Gly Val

Leu Ile Ala Cys Tyr Leu Val Phe Ala Thr Arg Met Thr Ala Asp Gln

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Val	Thr	Met	Gln	Leu 325	Asp	Lys	Glu	Leu	Leu 330	Arg	His	Asp	Ser	Asp 335	Val
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- Gln Thr Ile Pro Val Asp Val Glu Glu Ala Phe Leu Ala His Ala Ile 690 695 700
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- Tyr His Ile Ile Asp Gln Phe Leu Ser His Gly Ile Lys Thr Ile Ile 50 55 60

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- Gln Glu Ser Gly Phe Thr Tyr Leu Pro Glu Ala Phe Met Glu Ala Gly 85 90 95
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- Ser Tyr Ser Asp Ser Asp Leu Lys Arg Ala Glu Asn Leu Leu Glu Gln 340 350
- Gly Glu Thr Pro Gln Thr Val Pro Ala Gln Ile Leu Val Gly His Lys 355 360 365
- Pro Arg Gln Gln Lys Leu Ile Ser His Cys Tyr Ile Pro Gln Ser Pro 370 375 380

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Phe Gly Trp Lys Asp Tyr Gly Val Ala Ser Leu Thr Thr Ile Leu Asp 65 70 75 80

Met Val Lys Val Met Thr Phe Ala Leu Gln Glu Gly Lys Val Ala Ile 85 90 95

His Cys His Ala Gly Leu Gly Arg Thr Gly Val Leu Ile Ala Cys Tyr 100 · 105 110

Leu Val Phe Ala Thr Arg Met Thr Ala Asp Gln Ala Ile Ile Phe Val 115 120 125

Arg Ala Lys Arg Pro Asn Ser Ile Gln Thr Arg Gly Gln Leu Leu Cys 130 135 140

Val Arg Glu Phe Thr Gln Phe Leu Thr Pro Leu Arg Asn Ile Phe Ser 145 150 155 160

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Arg Gln Arg His Leu Leu His Gly Tyr Glu Ala Arg Leu Leu Lys His 180 185 190

Val Pro Lys Ile Ile His Leu Val Cys Lys Leu Leu Leu Asp Leu Ala 195 200 205

Glu Asn Arg Pro Val Met Lys Asp Val Ser Glu Gly Pro Gly Leu 210 215 220

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Asp Lys Glu Leu Leu Arg His Asp Ser Asp Val Ser Asn Pro Pro Asn 245 250 255

Pro Thr Ala Val Ala Ala Asp Phe Asp Asn Arg Gly Met Ile Phe Ser 260 265 270

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Leu	ı Ile	e Ser	His 340		Tyr	Ile	Pro	Gln 345		Pro	Glu	Pro	Asp 350		His
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Cys Ser Lys Leu Met Lys Arg Arg Leu Gln Gln Asp Lys Val Leu Ile
Thr Glu Leu Ile Gln His Ser Ala Lys His Lys Val Asp Ile Asp Cys
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Leu Ser Ser Asp Cys Phe Leu Thr Val Leu Leu Gly Lys Leu Glu Lys
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Cys Ile Ser Gln Pro Cys Leu Pro Val Ala Asn Ile Gly Pro Thr Arg
Ile Leu Pro Asn Leu Tyr Leu Gly Cys Gln Arg Asp Val Leu Asn Lys
Glu Leu Met Gln Gln Asn Gly Ile Gly Tyr Val Leu Asn Ala Ser Asn
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Ser Val Asp Phe Ile Glu Lys Ala Lys Ala Ser Asn Gly Cys Val Leu
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Asn Cys Ser Lys Leu Met Lys Arg Arg Leu Gln Gln Asp Lys Val Leu 50 60

Ile Thr Glu Leu Ile Gln His Ser Ala Lys His Lys Val Asp Ile Asp 65 70 75 80

Cys Ser Gln Lys Val Val Tyr Asp Gln Ser Ser Gln Asp Val Ala 85 90 95

Ser Leu Ser Ser Asp Cys Phe Leu Thr Val Leu Leu Gly Lys Leu Glu 100 105 110

Lys Ser Phe Asn Ser Val His Leu Leu Ala Gly Gly Phe Ala Glu Phe 115 120 125

Ser Arg Cys Phe Pro Gly Leu Cys Glu Gly Lys Ser Thr Leu Val Pro 130 135 140

Thr Cys Ile Ser Gln Pro Cys Leu Pro Val Ala Asn Ile Gly Pro Thr 145 150 155 160

Arg Ile Leu Pro Asn Leu Tyr Leu Gly Cys Gln Arg Asp Val Leu Asn 165 170 175

Lys Glu Leu Met Gl<br/>n Gl<br/>n Asn Gly Ile Gly Tyr Val Leu Asn Ala Ser 180 \$185

Asn Thr Cys Pro Lys Pro Asp Phe Ile Pro Glu Ser His Phe Leu Arg 195 200 205

Val Pro Val Asn Asp Ser Phe Cys Glu Lys Ile Leu Pro Trp Leu Asp 210 215 220

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- Phe Cys Leu Ala Asp Thr Cys Leu Leu Leu Met Asp Lys Arg Lys Asp 225 230 235 240
- Pro Ser Ser Val Asp Ile Lys Lys Val Leu Leu Glu Met Arg Lys Phe 245 250 255
- Arg Met Gly Leu Ile Gln Thr Ala Asp Gln Leu Arg Phe Ser Tyr Leu 260 265 270
- Ala Val Ile Glu Gly Ala Lys Phe Ile Met Gly Asp Ser Ser Val Gln 275 280 285
- Asp Gln Trp Lys Glu Leu Ser His Glu Asp Leu Glu Pro Pro Pro Gly 290 295 300
- His Ile Pro Pro Pro Pro Arg Pro Pro Lys Arg Ile Leu Glu Pro His 305 310 315 320

Asn

- <210> 207
- <211> 184
- <212> PRT
- <213> Homo sapiens

<400> 207

- Ser Gly Ser Phe Glu Leu Ser Val Gln Asp Leu Asn Asp Leu Leu Ser 1 5 10 15
- Asp Gly Ser Gly Cys Tyr Ser Leu Pro Ser Gln Pro Cys Asn Glu Val 20 25 30
- Thr Pro Arg Ile Tyr Val Gly Asn Ala Ser Val Ala Gln Asp Ile Pro 35 40 45
- Lys Leu Gln Lys Leu Gly Ile Thr His Val Leu Asn Ala Ala Glu Gly
- Arg Ser Phe Met His Val Asn Thr Asn Ala Asn Phe Tyr Lys Asp Ser 65 70 75 80

Gly Ile Thr Tyr Leu Gly Ile Lys Ala Asn Asp Thr Gln Glu Phe Asn 85 90 95

Leu Ser Ala Tyr Phe Glu Arg Ala Ala Asp Phe Ile Asp Gln Ala Leu 100 105 110

Ala Gln Lys Asn Gly Arg Val Leu Val His Cys Arg Glu Gly Tyr Ser 115 120 125

Arg Ser Pro Thr Leu Val Ile Ala Tyr Leu Met Met Arg Gln Lys Met 130 135 140

Asp Val Lys Ser Ala Leu Ser Ile Val Arg Gln Asn Arg Glu Ile Gly 145 150 155 160

Pro Asn Asp Gly Phe Leu Ala Gln Leu Cys Gln Leu Asn Asp Arg Leu 165 170 175

Ala Lys Glu Gly Lys Leu Lys Pro 180

<210> 208

<211> 144

<212> PRT

<213> Homo sapiens

<400> 208

Ala Ser Phe Pro Val Glu Ile Leu Pro Phe Leu Tyr Leu Gly Cys Ala 1 5 10 15

Lys Asp Ser Thr Asn Leu Asp Val Leu Glu Glu Phe Gly Ile Lys Tyr

Ile Leu Asn Val Thr Pro Asn Leu Pro Asn Leu Phe Glu Asn Ala Gly

Glu Phe Lys Tyr Lys Gln Ile Pro Ile Ser Asp His Trp Ser Gln Asn 50 55 60

Leu Ser Gln Phe Phe Pro Glu Ala Ile Ser Phe Ile Asp Glu Ala Arg 65 70 75 80

Gly Lys Asn Cys Gly Val Leu Val His Ser Leu Ala Gly Ile Ser Arg 85 90 95

Ser Val Thr Val Thr Val Ala Tyr Leu Met Gln Lys Leu Asn Leu Ser 100 105 110

Met Asn Asp Ala Tyr Asp Ile Val Lys Met Lys Lys Ser Asn Ile Ser 115 120 125

Pro Asn Phe Asn Phe Met Gly Gln Leu Leu Asp Phe Glu Arg Thr Leu 130 135 140